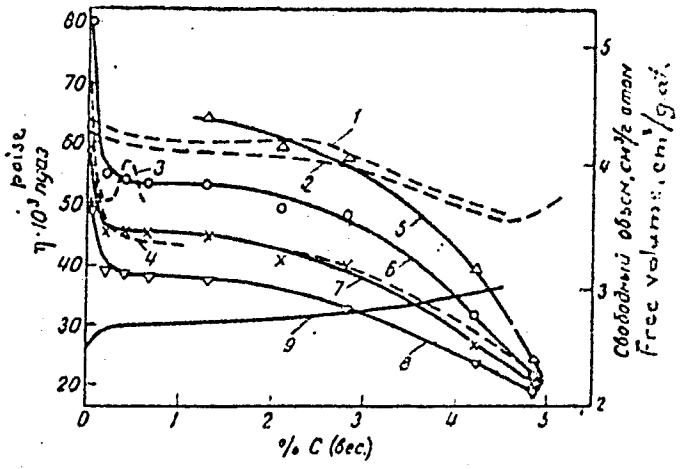
"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7

Viscosity of ....

S/126/63/015/002/010/033
E193/E383

Fig. 2:



Card 3/3

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7

ACCESSION NR: AP4004688 S/0126/63/016/005/0675/0680

AUTHORS: Vostryakov, A. A.; Vatolin, N. A.; Yesin, O. A.

TITLE: Viscosity and electrical resistance of molten chromium alloys

SOURCE: Fizika metallov i metallovedeniye, V. 16, no. 5, 1963, 675-680

TOPIC TAGS: molten chromium alloy, chromium alloy, viscosity, electrical resistance, composition, molten alloy, molten alloy viscosity, molten metal viscosity

ABSTRACT: The variation of kinematic viscosity and electrical resistivity of liquid Cr-alloys with Fe, C, and Al with respect to temperature and Cr content was studied by the torsional oscillation method (of crucible with the melt). The alloys were prepared of technically pure iron, chromium obtained by the alumothermal method, electrolytic aluminum, and pure graphite. These materials were melted in a resistance oven filled with helium. Kinematic viscosity and electrical resistivity were calculated by the Ye. G. Shvidkovskiy (Nekotory*ye voprosy* vyazkosti rasplavlenny*kh metallov, GITTL, 1955) and A. R. Regel' (ZhTF, 1948, 18, 1511) formulas. It was established that: 1) the viscosity and activation energy isotherms of liquid Fe-Cr had minima corresponding to those on the line of liquidus; 2) the viscosity of carbon-free ferrochrome increased suddenly at a Cr content

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ACCESSION NR: AP4004688

exceeding 40% due to the ability of the alloy to absorb gases and to enter into reactions with refractory materials; 3) the viscosity of a carbon-saturated ferrochrome increased considerably at 1550C; this is explained by the separation of the solid carbon phase; 4) the viscosity of ferrochrome containing 5% of C showed a stronger increase with the increase in Cr concentration than in the Fe-Cr system; this is assumed to be due to the formation of chromium carbides; 5) the viscosity isotherms of the Fe-C system had a minimum at 3.5% C; the increase in temperature from 1400 to 1600C caused the rise in the minimum; 6) the electrical resistance of carbon-free ferrochrome is somewhat lower than that of the carbon-containing alloys. In both cases the resistance is almost independent of the Cr content. Orig. art. has: 2 tables and 4 figures

ASSOCIATION: Institut metallurgii UFAN SSSR (Institute of Metallurgy UFAN SSSR)

SUBMITTED: 17May63 DATE ACQ: 03Jan64 ENCL: 00

SUB CODE: ML NO REF SOV: 015 OTHER: 007

Card 2/2

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7

VA[illegible], N.[illegible]; KH[illegible], [illegible].

Apparatus for determining the density of liquid metals at high temperatures. Zav. lab. 30 no.5:631-632 '64. (MIRA 17:5)

1. Institut metallurgii Ural'skogo filiala AN SSSR.

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7

VOSTRYAKOV, A.A.; VATOLIN, N.A.; YESIN, O.A.

Viscosity and electric resistance of liquid iron alloys with phosphorus and sulfur. Fiz. met. i metalloved. 18 no.3:476-478 S '64. (MIRA 17:11)

1. Institut metallurgii, Sverdlovsk.

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7

VOSTRYAKOV, A.A. (Sverdlovsk); VATOLIN, N.A. (Sverdlovsk); YERIN, G.A. (Sverdlovsk); KONOVALOV, G.F. (Sverdlovsk)

Electromagnetic separation of $FeSn_2$ crystals from liquid tin.
Izv. AN SSSR. Met. no.6:58-61 N-D '65. (MIRA 19:1)

1. Submitted June 3, 1964.

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7

ACC NR: AT7004214 (N) SOURCE CODE: UR/0000/66/000/000/0214/0218

AUTHORS: Dubinin, E. L.; Yesin, O. A.; Vatolin, N. A.

ORG: none

TITLE: Removal of nonmetallic impurities from liquid iron by electromagnetic forces

SOURCE: AN SSSR. Institut metallurgii. Eksperimental'naya tekhnika i metody vysokotemperaturnykh izmereniy (Experimental techniques and methods of high temperature measurement). Moscow, Izd-vo Nauka, 1966, 214-218

TOPIC TAGS: ELECTROMAGNETIC FIELD, LIQUID METAL, metallurgic research, iron, steel alloy, metal purification, metal melting/ ShKh-15 steel alloy

ABSTRACT: The possibility of removing nonmetallic impurities from liquid iron by an electromagnetic field was investigated. The experimental technique is an extension of the method developed by L. A. Verte (Tsvetnyye metally, 1961, No. 6, 61). A schematic of the experimental apparatus is presented (see Fig. 1). The method was tested on Armco iron and ShKh-15 steel specimens which were fused, saturated with oxygen, reduced with aluminum, and then purified in the above apparatus. The state of purification was determined metallographically. It was found that the rate of removing nonmetallic inclusions from the liquid specimens was improved when the lower electrode was charged positively; the rate was retarded when the latter was

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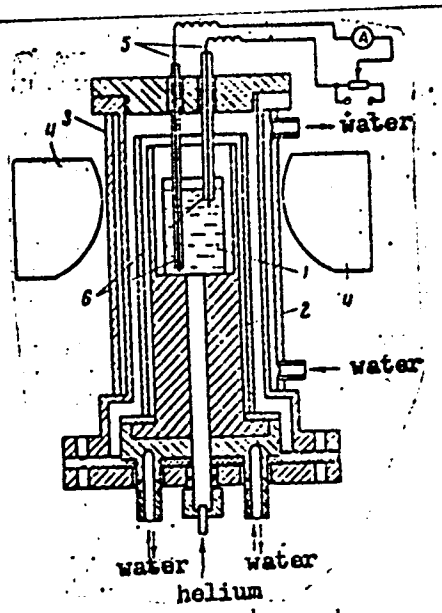

Fig. 1. Schematic of the experimental installation.
1 - alundum crucible; 2 - electrographite resistance furnace; 3 - water-cooled jacket; 4 - poles of electromagnet; 5 - tungsten electrodes; 6 - alundum tubes

charged negatively. Orig. art. has: 4 graphs.

SUB CODE: 11/ SUBM DATE: none/ ORIG REF: 003

Card 2/2

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7

VATOLIN, N.A.; YESIN, O.A.; RUBININ, E.L.

Electric transfer of silicon, phosphorus, and sulfur in liquid cast iron and copper. Fiz. met. i metalloved. 19 no.4:634-636 Ap '65. (MIRA 18:5)

1. Institut metallurgii, Sverdlovsk.

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7

VATOLIN, N A

Category: USSR / Physical Chemistry. Thermodynamics. Thermochemistry. Equilibrium. Physico-chemical analysis. Phase transitions. B-8

Abs Jour: Referat Zhur-Khimiya, No 9, 1957, 29927

Author : Vatolin N. A., Yesin O.A.
Inst : not given
Title : Effect of Different Elements on Solubility of Carbon in Liquid Iron

Orig Pub: Zh. obshch. khimii, 1956, 26, No 6, 1543-1548

Abstract: Consideration of the effect of P, Cr, Mn, S and V on solubility of C in liquid Fe, and also of the effect of Si on solubility of C in molten Mn and ferrochrome. It is shown that the observed regularities concerning the effect of nature and concentration of the addition, and also of the temperature, can be interpreted, qualitatively, by means of the theory of regular solutions.

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L 41475-65 EWT(1)/EWT(m)/EPF(c)/EPR/EWP(t)/EWP(b)/EWP(1) Pc-4/Pq-4/Pg-4/Ps-4/Pu-4/Pk-4/Pl-4 IJP(c) JD/WW/JW/JG/GS/BC

ACCESSION NR: AT5003526 S/0000/64/000/000/0013/0016

52
B+1

AUTHOR: Vostryakov, A. A.; Vatolin, N. A.; Limatenko, G. F.

TITLE: Toughness of Cr - Al alloys

SOURCE: Nauchno-tekhnicheskaya konferentsiya molodykh uchenykh, 1st, Sverdlovsk, 1962. Trudy, pt. 1: Chernaya metallurgiya (Ferrous metallurgy), Sverdlovsk, 1964, 13-16

TOPIC TAGS: alloy toughness, kinematic viscosity, activation energy, chromium alloy, aluminum alloy

ABSTRACT: The authors review a number of papers dealing with the determination of toughness in alloys and discuss their own standard investigation of this property in Al - Cr alloys. Electrolytic Al and aluminothermally prepared Cr were used. The Cr content was varied from 0 to 50%. With a rise in the Cr content to 30%, toughness increased about 20 to 3 times and was particularly conspicuous with concentrations between 10 and 20% and at low overheating temperatures above the liquidus line. Kinematic viscosity was determined from the equation

$$\delta = \frac{1}{n} \ln \frac{A_o}{A_n},$$

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ACCESSION NR: AT5003526

where δ is the logarithmic damping decrement; n is the number of oscillations; A_0 is the initial oscillation amplitude and A_n is the amplitude of the n-th oscillation. Orig. art. has: 1 table and 6 formulas.

ASSOCIATION: None

SUBMITTED: 11Feb64 ENCL: 00 SUB CODE: MM

NO REF SOV: 008 OTHER: 007

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7

ACCESSION NR: AP4035096 S/0032/64/000/005/0631/0632

AUTHORS: Vatolin, N. A.; Kern, E. M.

TITLE: Apparatus for measuring the density of molten metals at high temperatures

SOURCE: Zavodskaya laboratoriya, no. 5, 1964, 631-632

TOPIC TAGS: molten metal density, density measurement, high melting metal, amperovoltmeter Ts 315

ABSTRACT: An apparatus was developed for determining the density of molten metals and alloys with high melting points. It operates by measuring the level melt and represents an improvement on the apparatus designed by D. A. Petrov and V. M. Glazov (Zavodskaya laboratoriya, XXIV, 1, 34, 1958). In the improved model (see Fig. 1 of the Enclosure) a crucible (1) is suspended by molybdenum wires (3) with a coefficient of thermal expansion equal to that of the rods (4). The heating assembly contains a graphite element (5), a quartz or graphite screen (6), a water-cooled case (7), and a thermocouple (8). The joints in the case are sealed with rubber gaskets (10). A movable bar (12) operates through a Wilson joint (11) and is connected to an external micrometric adjuster (13). One of the rods (4) is

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ACCESSION NR: AP4035096

connected to the case and the other to an ohmmeter (14). The circuit is closed when the rods reach the metal. To prevent melting of the rods, they are kept from touching the molten metal by bearing against an alundum boat (15) with its bottom either covered with molybdenum foil or rubbed with graphite. Before starting the operation, the apparatus is evacuated to 10^{-2} mm Hg and is filled with an inert gas. The crucible is graduated for volume at room temperature. Density determinations of molten iron and silicon produced values close to those obtained by other methods. Orig. art. has: 1 figure.

ASSOCIATION: Institut metallurgii Ural'skogo filiala Akademii nauk SSSR (Metallurgical Institute, Ural Branch, Academy of Sciences SSSR)

SUBMITTED: 00 DATE ACQ: 20May64 ENCL: 01

SUB CODE: MM NO REF SOV: 001 OTHER: 001

Card 2/3

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7

VOSTRYAKOV, A.A.; VATOLIN, N.A.; YESIN, O.A.

Viscosity and electric resistance of liquid chromium alloys. Fiz. met. i metalloved. 16 no.5:675-680 N '63. (MIRA 17:2)

1. Institut metallurgii Ural'skogo filiala AN SSSR.

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7

VATOLIN, N.A.; YESIN, O.A.

Density of liquid manganese alloys with silicon, iron, and carbon. Fiz. met. i metalloved. 16 no.6:936-937 D '63. (MIRA 17:2)

1. Institut metallurgii Ural'skogo filiala AN SSSR.

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7

BURMISTROVICH, Ye.L.; VATOLIN, Ye.S.; DEMIDYUK, G.P.; MARCHENKO, L.N.; ROSSI, B.D.; TATARNIKOV, A.A.; SHATAYEV, M.G.; ASSONOV, V.A., otv.red.; OKHRIMENKO, V.A., red.izd-va; KONDRAT'YEVA, M.A., tekhn.red.

[Handbook on blasting operations] Spravochnik po burovzryvnym rabotam. Pod red. V.A.Assonova. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po gornomu delu, 1960. 450 p. (MIRA 13:3)
(Blasting) (Coal mines and mining)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7

VATOLIN, Ye.S.

Choice of efficient drilling parameters in carrying out development workings. Vzryv. delo no.46/3:29-33 '61. (MIRA 15:1)
(Boring)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7

IOFFE, Anatoliy Fedorovich; VATSENKO, V.A., red.; BORUNOV, N.I., tekhn.red.

[Applications of magnetic recording] Primenenie magnitnoi zapisi. Moskva, Gos.energ.izd-vo, 1959. 102 p. (Massovaia radiobiblioteka, no.353). (MIRA 13:1)
(Magnetic recorders and recording)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7

24(8) PHASE I BOOK EXPLOITATION SOV/2117

Soveshchaniye po eksperimental'noy tekhnike i metodam vysokotemperaturnykh issledovaniy, 1956

Eksperimental'naya tekhnika i metody issledovaniy pri vysokikh temperaturakh; trudy soveshchaniya (Experimental Techniques and Methods of Investigation at High Temperatures; Transactions of the Conference on Experimental Techniques and Methods of Investigation at High Temperatures) Moscow, AN SSSR, 1959. 789 p. (Series: Akademiya nauk SSSR. Institut metallurgii. Komissiya po fiziko-khimicheskim osnovam proizvodstva stali) 2,200 copies printed.

Resp. Ed.: A.M. Samarin, Corresponding Member, USSR Academy of Sciences; Ed. of Publishing House: A.L. Bankvitser.

PURPOSE: This book is intended for metallurgists and metallurgical engineers.

COVERAGE: This collection of scientific papers is divided into six parts: 1) thermodynamic activity and kinetics of high-temperature processes 2) constitution diagram studies 3) physical properties of liquid metals and slags 4) new analytical methods and production of pure metals 5) pyrometry, and 6) general questions. For more specific coverage, see Table of Contents.

Vatolin, N.A., and O.A. Yesin. Solubility of Carbon in Iron Alloyed with Various Elements 88

A study was made of the effect of phosphorus, chromium, manganese, sulfur, and vanadium on the solubility of carbon in liquid iron, and also of silicon on the solubility of carbon in molten manganese and ferrochrome. It was shown that regularities observed in the effect of the nature and concentration of the addition, as well as of the temperature, can be qualitatively explained with the aid of the theory of regular solutions.

Ivanov, L.I., I.S. Kulikov, and M.P. Matveyeva. Methods of Measuring the Thermodynamic Constants of Metals and Alloys at High Temperature 96

An apparently reliable method was developed for determining the heat of sublimation of metals, making use of the principle of isotope exchange in the gaseous phase of metals.

The use of radioactive isotopes permits the determination of partial values of the following thermodynamic constant: rate of vaporization, vapor pressure, heat of sublimation, and the individual thermodynamic activity of each of the elements of the alloy.

5

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VATOLIN, N.A.

LAPINSKIEL, B.M.; YESIN, O.A.; MUSIKHIN, B.I.; VATOLIN, N.A.

Elektrokhimicheskoe legirovanie stali vanadiem.

report submitted for the 5th Physical Chemical Conference on Steel Production.

Moscow _ 30 JUL 1959

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7

VATOLIN, N.A.; YESIN, O.A.

Magnetic susceptibility in molten antimony-palladium alloys. Fiz. met. i metalloved. 10 no.5:798-800 N '60. (MIRA 14:1)

1. Institut metallurgii Ural'skogo filiala Akademii nauk SSSR.
(Antimony-palladium alloys—Magnetic properties)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7

85975
S/126/60/010/005/030/030
E032/E414

24.2200 1144, 1395, 1482, 1162

AUTHORS: Vatolin, N.A. and Yesin, O.A.

TITLE: Magnetic Susceptibility of Antimony-Palladium Melts

PERIODICAL: Fizika metallov i metallovedeniye, 1960, Vol.10, No.5, pp.798-800

TEXT: In recent years, magnetic analysis has been widely used in chemical studies. This method is one of the few which can be used to obtain direct information on the structure of liquid metal systems. The present paper reports measurements of the magnetic suspectibility of antimony-palladium melts, using the Faraday method. The force on the specimens was measured with the aid of an analytical balance, the balancing force being produced by a permanent magnet and a compensating solenoid. The specimens were placed in a heater consisting of two coaxial quartz tubes. A bifilar nichrome heater was wound on one of the tubes. The temperature was measured by a thermocouple. All the measurements were carried out at atmospheric pressure in an argon atmosphere. Sponge palladium and chemically pure antimony were investigated. At room temperature the magnetic susceptibility of antimony was -0.34×10^{-6} while the susceptibility of palladium was

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E032/E414

Magnetic Susceptibility of Antimony-Palladium Melts

22.8×10^{-6}. These figures differ from published data, indicating that the materials employed contained some unknown impurities. The palladium antimony alloys (44% Sb and 56% Pd) were prepared in an argon atmosphere at 900°C. 1.765 g of the material thus obtained was placed in a quartz ampoule, the susceptibility of the quartz ampoule being compensated for by an identical empty ampoule. The working space was then evacuated and filled with argon and the specimen was heated to 850°C. After the measurements had been carried out, the temperature was reduced, the ampoule was weighed and the loss of antimony from the alloy was determined. It was usually found to be between 0.005 and 0.02% of the total amount of material. A known amount of antimony was then added and the experiment was repeated. The results obtained are shown in the figure and table on p.799. They show that palladium - antimony alloys have a weak diamagnetism at 850°C, while at room temperature they are relatively strong paramagnetics (susceptibility between 2×10^{-6} and 9×10^{-6}). As can be seen from the figure, the susceptibility versus concentration curve has

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7

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S/126/60/010/005/030/030
E032/E414

Magnetic Susceptibility of Antimony-Palladium Melts

a minimum of 54% Sb. This can apparently be explained by the formation of a valence bond between the d-electrons of the palladium atoms and the p-electrons of the antimony atoms. The above concentration of 54% Sb corresponds to the compound PdSb. The present measurements thus indicate that in palladium - antimony melts, there are ordered structures corresponding to the compound PdSb. There are 1 figure, 1 table and 7 references: 2 Soviet and 5 Non-Soviet (one of which is translated into Russian).

ASSOCIATION: Institut metallurgii UFAN SSSR
(Institute of Metallurgy UFAN USSR)

SUBMITTED: May 26, 1960

Card 3/3

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7

40679

S/126/62/014/002/013/018
E073/E535

19 8100

AUTHORS: Dubinin, E.L., Yesin, O.A. and Vatolin, N.A.

TITLE: Concentration dependence of the magnetic susceptibility of some liquid alloys

PERIODICAL: Fizika metallov i metallovedeniye, v.14, no.2, 1962, 290-293

TEXT: In an earlier paper the authors discussed the results of measurements of the specific magnetic susceptibility $\varkappa_g$ of a number of carbon-free melts. Using the same measuring technique as before, the authors studied the dependence of $\varkappa_g$ on the composition of the following liquid alloys: Fe-P-C and Fe-C-Mn at 1400°C, Fe-Cr, Fe-C-Cr at 1400 and 1700°C, Fe-C at 1550°C and Mn-C at 1350 and 1550°C. The carbon-saturated alloys were produced from pig-iron made by smelting in graphite crucibles Armco iron, electrolytic manganese and the desired additions of other elements. 3-5 g charges of the samples to be investigated were placed in alundum crucibles and charged into the furnace. At this temperature all the alloys were paramagnetic. The composition of the alloys (wt.%) is given in the Table. The

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results are presented in the form of plots. Fig.1 shows the dependence of the magnetic susceptibility, $\varkappa_g \cdot 10^6$, as a function of the contents (wt.%) of C and P: 1 - Fe-P, 1400°C; 2 - Fe-C-P, 1400°C; 3 - Fe-C, 1550°C; 4 - Mn-C, 1350°C; 5 - Mn-C, 1550°C; + - Fe-P, 1400°C calculated on the basis of the validity of the additive law. Fig.2 shows the dependence of the magnetic susceptibility, $\varkappa_g \cdot 10^6$ as a function of the manganese and chromium contents (wt.%): 1 - Fe-Mn, 1400°C; 2 - Fe-Cr, 1400°C; 3 - Fe-C-Mn, 1400°C; 4 - Fe-C-Cr, 1400°C; 5 - Fe-Cr, 1700°C; 6 - Fe-C-Cr, 1700°C. There are 2 figures and 1 table.

ASSOCIATION: Institut metallurgii UFANa (Institute of Metallurgy, UFAN)

SUBMITTED: November 25, 1961 (initially)
April 21, 1962 (after revision)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7"

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Concentration dependence ...

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E073/E535

Composition of the alloys, wt.%

Fe—C	Fe—C—P		Fe—C—Mn		Mn—C	Fe—C—Cr		Fe—Cr
C	P	C	Mn	C	C	Cr	C	Cr
0,5	2,2	3,9	2,0	4,9	3,2	2,0	4,8	1,9
1,2	5,5	3,0	10,0	5,2	4,1	11,6	5,6	11,4
1,3	11,3	1,0	21,7	5,6	5,3	20,2	6,2	20,6
1,6	14,0	0,5	30,2	5,7	6,2	31,9	6,9	32,5
2,3	17,3	0,4	40,0	6,0	7,3	40,0	7,3	42,2
2,4	21,7	0,3	50,2	6,2	7,9	51,4	7,6	50,0
2,5	—	—	—	—	—	—	—	—
3,0	—	—	—	—	—	—	—	—
3,6	—	—	—	—	—	—	—	—
4,1	—	—	—	—	—	—	—	—
4,5	—	—	—	—	—	—	—	—

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Concentration dependence ...

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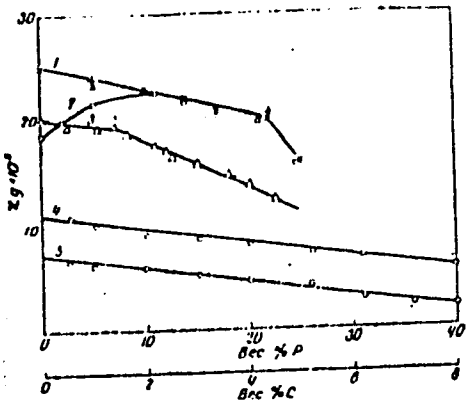

Fig.1

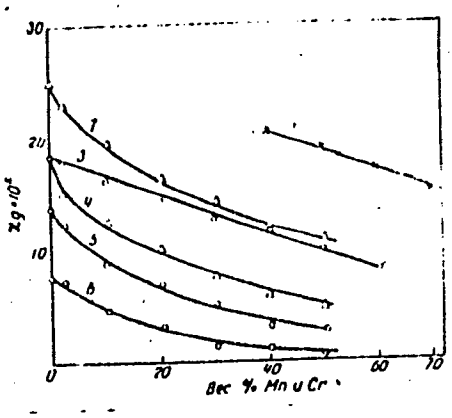

Fig.2

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GOL'DSHTEYN, Nison L'vovich; VOSKOBOYNIKOV, V.G., prof., doktor tekhn. nauk, retsenzent; NEKRASOV, N.K., dots., kand. tekhn. nauk, retsenzent; VATOLIN, N.A., kand. tekhn. nauk, retsenzent; LEPINSKIKH, B.M., retsenzent; POPEL', S.I., prof. doktor tekhn. nauk, red.; BUR'KOV, M.M., red. izd-va; TURKINA, Ye.D., tekhn. red.

[Short course on the theory of metallurgical processes] Kratkii kurs teorii metallurgicheskikh protsessov. Sverdlovsk, Gos. nauchno-tekhn.izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1961. 334 p. (MIRA 15:2)

(Metallurgy)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7

[illegible]

AUTHORS: Dubinin, [illegible], Yesin, O.A. and [illegible], N.A.

TITLE: Magnetic susceptibility of liquid alloys

PERIODICAL: Fizika metallov i metallovedeniye, v 12, no.5, 1961, 763-765

TEXT: The authors studied the isotherms of the magnetic susceptibility $\varkappa$ of Fe-Mn, Fe-P and Mn-Si melts by means of the Faraday method. To exclude the possible influence on the magnetic field, the heater was in the form of a bifilar graphite tube. The alloy was placed into quartz ampoules with small holes at the end (0.5 to 1.0 mm). The magnetic susceptibility of pure iron and of manganese were determined for substances placed into alundum crucibles. The ampoules were suspended to analytical scales. The measurements were carried out in an argon atmosphere, which was carefully purified of oxygen (0.009% O_2), applying an excess pressure. The temperature was maintained at 1400±10°C and was measured by a Pt/Pt Rh thermocouple. The magnetic field was maintained constant for each type of alloy within the limits of 400 to 7000 Oe. The ampoules were weighed at the temperatures of

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the experiment in presence and in absence of the magnetic field. From the weight difference the pulling force and the magnetic susceptibility were calculated. As starting materials for the Mn-Si alloys studied (containing 0 to 50 wt.% Si) 99.99% purity Mn and crystalline (99.99%) Si were used, the weight of the charge being about 15 g and the magnetic field intensity 6900 Oe. All the alloys studied were paramagnetic at the test temperature. It was found that the curve of the dependence of the magnetic susceptibility on concentration has a slight kink at 3% Si corresponding to the compound MnSi. Similar kinks were obtained also in earlier studies of the e.m.f. in the system Mn-C-Si. Fe-Mn alloys were produced from carbonyl iron and electrolytic manganese. The charge was again 15 g and a magnetic field of 5500 Oe was used. At the test temperature all the alloys were paramagnetic; the susceptibility increases linearly with increasing iron content and this is attributed to the absence of chemical compounds. The Fe-P alloys were produced by adding ferrophosphor (containing 25% P) to carbonyl iron. The charge was 6 g, the magnetic field 5200 Oe. At the test temperature all the specimens were again paramagnetic

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Magnetic susceptibility of

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The dependence of the susceptibility of the melts on concentration shows a kink at a P content of 22% corresponding to the compound Fe_2P; the presence of this kink is in agreement with earlier published data on e.m.f. The obtained results show that at 1400°C iron is a stronger paramagnetic than manganese. The values of magnetic susceptibility for pure iron at 1400°C agree with those obtained by Vertman A.A., and Samarin A.M. (Ref.2: DAN SSSR, 1960, 134, No.2, 1326). The kinks on the curves $\varkappa$ vs. composition of the Mn-Si and Fe-P alloys are attributed to a sharp rise of the rate of increase of covalent bonds. Up to a composition corresponding to chemical compounds a relatively small part of the electrons pair off and the compounds MnSi and Fe_2P are paramagnetic compared to pure Fe and Mn. After forming chemical compounds the number of paired electrons starts to increase rapidly and the paramagnetism of the alloys decreases sharply. A known confirmation of this is the fact that solid $MnSi_2$ is diamagnetic and FeP is less paramagnetic than Fe_2P. Thus, the curves of the dependence of the magnetic susceptibility on concentration for liquid Mn-Si and Fe-P alloys give additional

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Magnetic susceptibility of ... S/126/61/012/005/020/028
E073/E535

information, indicating the existence in these alloys of atom groupings corresponding to the alloys MnSi and Fe_2P There are 1 figure and 12 references; 8 Soviet-bloc and 4 non-Soviet-bloc The English-language references read as follows Ref 3: Nakagawa Y.J. Phys.Soc. Japan, 1956, 7, No.8; Ref.5: Secksmith W. Rearce R.R. Proc. Roy.Soc., 1938, 167, 189; Ref.12: Shu-Cuiba J. Phys.Soc. Japan, 1960, 15, No.4, 581.

ASSOCIATION: Institut metallurgii UFAN SSSR
(Institute of Metallurgy UFAS USSR)

SUBMITTED: May 5, 1961

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7

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B156/B101

18.1200

AUTHORS: Lepinskikh, B. M., Yesin, O. A., Musikhin, V. I., Vatolin, N. A.

TITLE: The electrochemical alloying of metal with vanadium

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 8, 1962, 372, abstract 8K198 (Sb. "Fiz.-khim. osnovy proiz-va stali". M., AN SSSR, 1961, 238-241)

TEXT: The electrochemical extraction of V from dumped or conversion blast furnace slags containing up to 20% V_2O_5 and up to 40% FeO is described. The cathodic current yield of V in relation to D_c, the furnace atmosphere, the composition of the slag and metal and the temperature is investigated. In oxidizing atmospheres the cathodic current is much lower than in reducing atmospheres, since in the first case the V is in the form of V_2O_5. Variation between 1 and 2.5 a/cm^2 in D_c may be accompanied by a possible variation between 5 and 25% in the initial V content. The metal bath of the furnace can be used as the cathode. [Abstracter's note: Complete translation.]

/B

Card 1/1

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7

5474* Use of the Method of Electromotive Forces for the Study of Liquid Manganese Alloys. Primenenie metoda elektrodvizhushchikh sil dlia izuchenia zhidkikh margantsovistykh splavov. Russian. O. A. Esin and N. A. Vatolin. Zhurnal Prikladnoi Khimii [illegible] Dec [illegible]

[illegible] of separate [illegible] effect of C and Si [illegible] graph [illegible]

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7

VATOLIN, N.A.; VETRENKO, Ye.A.

Using radioactive isotopes in metallurgical research. Atom. energ. 4 no.6:603-604 Je '58. (MIRA 11:8)
(Radioisotopes--Industrial applications)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7"

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VATOLIN, N.A.; REVEBTSOV, V.P.

Hydrogen and nitrogen in titanium wire. Trudy Inst.met.UFAN SSSR no.3:103-110 '59. (MIRA 13:4)
(Titanium--Metallurgy) (Gases in metals)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7

Vatolin, N. A.

Thermodynamic properties of sulfur in liquid iron-sulfur slags saturated with carbon. N. A. Vatolin and O. A. Esin. *J. Gen. Chem. U.S.S.R.* 24, 797-98(1954)(Engl. translation).—See *C.A.* 48, 13778*d*. H. L. H. (1)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7

VATOLIN, N. A.

24(8) PHASE I BOOK EXPLOITATION SOV/2809

Akademiya nauk SSSR. Otdeleniye khimicheskikh nauk

Termodinamika i stroyeniye rastvorov; trudy soveshchaniya... (Thermodynamics and Structure of Solutions; Transactions of the Conference Held January 27-30, 1958) Moscow, Izd-vo AN SSSR, 1959. 295 p. 3,000 copies printed.

Ed.: M. I. Shakhparonov, Doctor of Chemical Sciences; Ed. of Publishing House: N. G. Yegorov; Tech. Ed.: T. V. Polyakova.

PURPOSE: This book is intended for physicists, chemists, and chemical engineers.

COVERAGE: This collection of papers was originally presented at the Conference on Thermodynamics and Structure of Solutions sponsored by the Section of Chemical Sciences of the Academy of Sciences, USSR, and the Department of Chemistry of Moscow State University, and held in Moscow on January 27-30, 1958. Officers of the conference are listed in the Foreword. A list of other reports also read at the conference, but not included in this book, are given. Among the problems treated in this work are: electrolytic solutions, ultrasonic measurement, dielectric and thermodynamic properties of various mixtures, spectroscopic analysis, etc. References accompany individual articles.

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VATOLIN, N.A.

USSR

The study of liquid iron-phosphorus alloys by the electromotive-force method. O. A. Esin, L. K. Gavrilov, and N. A. Vatolin. *Doklady Akad. Nauk S.S.S.R.* 85, 87-9 (1952); cf. *C.A.* 45, 6512*; 46, 9452*.—The e.m.f. of Fe-P alloys was detd. by using the following concn. cell: Fe, $C_{(sat.)}$, P | CaO, MgO, SiO_2, Ca_3P_2, Mg_3P_2 | Fe, $C_{(sat.)}$, 24% P. One electrode had a const. compn. (24% P), whereas the concn. of P in the other was varied from 1.5 to 23% P. The measurements were made at 1470°. The e.m.f. curve had a point of inflection at 22% P which indicated the presence of the compd. Fe_3P which dissocd. only to a slight degree as indicated by the value of the activity of P.

J. Rovtar Leach

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VATOLIN, N. A

137-1958-2-2346

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 2, p 20 (USSR)

AUTHORS: Yesin, O.A., Vatolin, N.A.

TITLE: A Study of the Physicochemical Properties of Molten Ferroalloys by Means of Electromotive Forces (Izucheniye fiziko-khimicheskikh svoystv zhidkikh ferrosplavov metodom elektrodvizhushchikh sil)

PERIODICAL: V sb.: Fiz.-khim. osnovy proiz-va stali. Moscow, AN SSSR, 1957, pp 263-271. Diskus., pp 332-334

ABSTRACT: Measurements were made of the e.m.f. in galvanic cells at 1250-1470°. Serving as electrodes in the cells were the molten alloys Fe-P-C, Fe-Cr-C, Fe-Si-Cr-C, Fe-Mn-C, Si-Mn-C, Fe-S-C, and as the electrolyte a synthetic slag to which oxides of the element being investigated had been added. It was found that the e.m.f. changed in accordance with an established law as a function of the concentration of the alloy components. From the e.m.f. data it could be determined how active the P, Cr, Si, Mn, S, and V were in Fe alloys wherein the Fe was saturated with C. The breaks in the isothermal e.m.f. curves indicated that in molten alloys based on Fe slightly -dissociated compounds Fe_2P, (Fe,Cr) Si, (Fe,Cr) Si_2, Mn_2Si, and MnSi were possible. The

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137-1958-2-2346

A Study of the Physicochemical Properties of Molten Ferroalloys (cont.)

molten alloys Fe-Cr-C and Fe-Mn-C deviate positively from the ideal solutions and obey the law of semiregularity. B.L.

1. Alloys—Molten—Properties—Theory

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7

Some thermodynamic properties of sulfur in liquid iron-sulfur slags saturated with carbon. N. A. Vatolin and [illegible]. *Zhur. Obshchei Khim.* 24, [illegible]. An exptl. study was made with the [illegible] Fe, S, C [illegible] Na [illegible] SiO_2 Fe, 35% S, C [illegible] in which the S conc. was changed from 0.048 to 33%. The alloy of variable compn. was prepd. from synthetic pig iron, C 4.4, Mn 0.08, Si 0.1, S 0.03%, and the comparison electrode from the alloy S 35, Si 0.1, Mn 0.2, C 0.15%. These alloys were melted at 1250° in graphite crucibles under charcoal with const. mixing. The C concn. in the alloys contg. up to 0.71% S ranged from 4.5 to 3.5% in reasonable agreement with the empirical formula of Spratt and Kitchener. *C.A.* 47, 7411g. The electrolyte of compn. SiO_2 72, Na_2O 17, CaO 9, Na_2S 2% [illegible] with Na_2S in a graphite [illegible] only by the ratio of the activities of [illegible] the 2 alloys, and it was assumed that in the most dil. alloy the activity was equal to the mole fraction [illegible]. The S activities at 1250° were 0.048% S 4.4% [illegible] 4.2, 0.0018, [illegible] 0.71, 3.3, 0.0037, 29.0, 0.2, 0.043, 30.0, 0.2, 0.091, 33.0, 0.15, 0.306, 35.0, 0.15, 0.758. The limits of stratification were 0.75 and 27.5% S. The data agreed with those of other studies.

A. G. Guy

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7

VATOLIN, N.A.

YESIN, O.A.; VATOLIN, N.A.

Application of the method of electromotive force to the study of liquid manganese alloys. Zhur.prikl.khim. 27 no.12:1252-1256 D '54. (MLRA 8:2)

(Electromotive force) (Manganese alloys)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7

VATOLIN, N.A.; YESIN, O.A.

Some thermodynamic properties of sulfur in fluid, carbon-saturated iron-sulfur alloys. Zhur.ob.khim. 24 no.5:795-798 My '54. (MLRA 7:8)

1. Institut khimii i metallurgii Ural'skogo filiala Akademii nauk SSSR.
(Iron-sulfur alloys)

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VATOLIN, N.A.

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Chemical Abst.
Vol. 48 No. 4
Feb. 25, 1954
Metallurgy and Metallography

The properties of liquid iron-chromium alloys by the method of electromotive forces. O. A. Esin and N. A. Vatolin. *Izvest. Akad. Nauk S.S.S.R., Otdel. Tekh. Nauk* 1953, 1137-42.—The values of e.m.f. at 1460° in a concn. system consisting of 2 alloys of Fe with C and Cr of various compns. and with slag of CaO, MgO, SiO_2, and CrO were detd. The Cr concn. ranged from 1.08% to 27.5%; the C content was that of a satd. alloy. The e.m.f. detns. were used to calc. the free energy in transfer of Cr from the more concd. to the more dil. system, and coeffs. of activity of Cr and Fe were calcd. E.m.f. detns. were made in a system (at 1460°) whose electrodes were alloys of Fe with Cr and Si satd. with C, while CaO, MgO, and SiO_2 slag was used as the electrolyte. The Cr concn. was varied from 3% to 60%, and the Fe-Cr ratio was held near unity. The curves of dependence of e.m.f. on the concn. of Si shows 2 inflections, indicating the existence of at. groupings of silicides (Fe, Cr)Si and (Fe, Cr)Si_2. The result agrees wit[illegible]e existence of 2 breaks in the soly. curve of C in ferro[illegible]ochromium.
G. M. Kosolapoff

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7

VATOLIN, N. A.
USSR/Chemistry

Card 1/1

Authors : Vatolin, N. A.; and Esin, O. A.

Title : Certain thermodynamic characteristics of sulfur in liquid, carbon saturated ferrisulfide alloys

Periodical : Zhur. Ob. Khim. 24, Ed. 5, 795 - 798, May 1954

Abstract : The electromotive forces of a concentrated element in which liquid, carbon-saturated iron sulfide alloys served as electrodes were measured. The authors computed the activity and activity coefficients of the sulfur in these fusions and also determined the change in the free conversion energy of one-gram atom of sulfur changing from one solution into another. The results obtained are in perfect conformity with data obtained by means of other methods. Nine references. Tables, graph.

Institution : Academy of Sciences USSR, Ural Branch, Institute of Chemistry and Metallurgy

Submitted : July 6, 1953

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7

VATOLIN, NA.

USSR/Chemistry, Metallurgy - Iron-Phosphorus alloy 1 Jul 52

"The study of Liquid Iron-Phosphorous Alloys by the Method of Electromotive Forces," O. A. Yesin, L. K. Gavrilov, N.A. Vatolin, Inst of Chem and Metallurgy, Ural Affiliate, Acad Sci SSSR

"Dok Ak Nauk SSSR" Vol LXXXV, No 1, pp 87-89

Studied the relationship between the emf and phosphorous content in molten (1,470°) iron-phosphorus samples. From 1.5 to 22.0%, the relationship is almost const, but from 22 to 24% there is a sharp decrease in emf, indicating a break in the Fe-P bond. Presented by Acad I. P. Bardin 25 Apr 52.

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APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7

YESIN, O. A., GAVRILOV, L. K., VATOLIN, N. A.

Iron Alloys

Investigation of liquid iron-phosphorus alloys by the method of electromotive forces. Dok. AN SSSR 85 no. 1, 1952

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

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7

YESIN, O.A., GAVRILOV, L.K., VATOLIN, N.A.

Iron Alloys

Investigation of liquid iron-phosphorus alloys by the method of electromotive forces. Dok. AN SSSR 85 no. 1, 1952.

Monthly List of Russian Accessions. Library of Congress. November 1952. UNCLASSIFIED.

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7

YESIN, O.A.; VATOLIN, N.A.; BARBIN, I.P., akademik.

Studying the properties of liquid iron-chromium alloys by the method of electromotive forces. Izv.AN SSSR, Otd.tekh.nauk no.8:1137-1142 Ag '53. (MLRA 6:8)

(Iron-chromium alloys)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7

VATOLIN, N.A.

3

B. T. R.
V. 3 No. 3
Mar. 1954
Metals-Extraction
and Refining

3686* Investigation of Properties of Liquid Iron-Chromium Alloys by the Method of Electromotive Forces. (Russian.) O. A. Esin and N. A. Vatolin. *Izvestiia Akademii Nauk SSSR, Otdelenie Tekhnicheskikh Nauk*, 1953, no. 8, Aug., p. 1137-1142.
Properties of Fe-C-Ni-Chromium alloy of different compositions was investigated at 1460 C. Tables, graphs. 10 re.

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7

VATOLIN, N.A.

J. of the Iron & Steel Inst.
Feb. 1954 Metallography

A Study of the Properties of Liquid Iron Chromium Alloys by the Electromotive Force Method. O. A. [illegible] N. A. Vatolin. [illegible] Nauk, 1953, [illegible] 1400° C. [illegible] Measurements of [illegible] at 1400° C. in a concentration cell made up of two Fe–Cr alloys and a slag containing CaO, MgO, SiO_2 and CaO. The chromium concentration was varied between [illegible] and [illegible] and all alloys were saturated with carbon. From the results obtained, free energy changes during the transfer of 1 g. atom of chromium from a more concentrated to a dilute solution, and the activity coefficients of iron and chromium were calculated. From the values and mode of variation of the activity coefficient of the alloys studied, a positive deviation from ideal behaviour was indicated. Similar measurements were also made for Fe–Cr–Si–C alloys (saturated with carbon) using as an electrolyte a slag containing CaO, MgO, and SiO_2. Silicon concentrations were varied from 3 to 60% with the iron chromium ratio (in percent) near unity. The curve representing the dependence of e.m.f. on silicon concentration has two points of inflection indicating the existance in the liquid alloy of atomic configurations corresponding to the silicides (Fe,Cr)Si and $(Fe,Cr)Si_2$. These results are in agreement with the two inflection points on the solubility curve of carbon in ferrochromium.—V. G.

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7

VATOLIN, N.D.; ROZHDESTVENSKIY, A.N.

Mechanical drilling of holes in harvesting stump wood.
Gidroliz. i lesokhim.prom. 9 no.6:26 '56. (MLRA 9:10)

1.Kosulinskiy lesopromkhoz.
(Boring) (Wood-using industries)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7

VATOLIN, V.

In step with life. Prom.koop. 13 no.3:36-37 Mr '59. (MIRA 12:4)

1. Rukovoditel' kollektiva khudozhestvennoy samodeyatel'nosti arteli "Medvedkovskiy khimprodukt," selo Medvedkovo, Moskovskoy oblasti.

(Medvedkovo--Amateur art activities)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7

VATOLINA, V.M., ordinator

Material on the clinical aspects, epidemiology, and treatment of deep trichophytosis, microsporosis, and favus. Vest.derm. i ven. 31 no.3:49 My-Je '57. (MIRA 10:11)

1. Iz mikologicheskogo otdela TSentral'nogo kozhno-venerologicheskogo instituta i 3-y klinicheskoy bol'nitsy imeni Korolenko.
(DERMATOMYCOSIS)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7

ADAMIDZE, D., inzh.; VATOLIN, Ye., inzh.; IGNAT'YEV, A., inzh.; PETRUKHIN, B., inzh.

Pneumatic blasting. Mast.ugl. 8 no.6:9 Je '59. (MIRA 12:10)

(Blasting) (Mining engineering)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7

PUGACH, Isay Markovich,[deceased], VATOLIN, Yevgeniy Stepanovich,; KAZAKOV, B.Ye., otv. red.; SHUSHKOVSKAYA, Ye. L., red. izd-va,; VINOGRADOVA, G.V., red. izd-va,; NADEINSKAYA, A.A., tekhn. red.

[Mining] Gornoe delo. Izd. 2, ispr. Moskva, Ugletekhizdat, 1958. 254 p. (MIRA 11:11)

(Mining engineering)

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7

IGNAT'YEV, A.D.; VATOLIN, Ye.S.; PETRUKHIN, B.S.; ADAMIDZE, D.I.

Holing and breaking-off of coal by the method of blasting water-stemmed bore hole charges. Ugol' Ukr. no.6:29-30 Je '60. (MIRA 13:7)

(Mining engineering)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7

VATOLIN, Ye. S.

Vatolin, Ye. S.

"Investigation of the parameters of drilling work in horizontal mining (on the example of the Kizedl coal basin)." Min Coal Industry USSR. Academy of the Coal Industry. Moscow, 1956. (Dissertation for the Degree of Candidate in Technical Sciences).

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No. 21, 1956. Moscow

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VATOLIN, Ye.S., otv.red.; LOZNEVA, A.A., red.izd-va; LOMILINA, L.N., tekhn.red.

[Coal and ore-mining research] Nauchnye issledovaniia po razrabotke ugol'nykh i rudnykh mestorozhdenii. Moskva, Gos. nauchno-tekhn.izd-vo lit-ry po gornomu delu, 1959. 489 p. (MIRA 13:6)

1. Akademiya nauk SSSR. Institut gornogo dela.
(Mining engineering)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7

TERPIGOREVA, Vera Dmitriyevna; MATVEYEV, Sergey Dmitriyevich; YATOLIN, Ya.S., otvetstvennyy redaktor; KHODNEVA, I.V., redaktor izdatel'stva; ZAZUL'SKAYA, V.F., tekhnicheskiy redaktor

Shaft sinking and drifting. Moskva, Ugletekhizdat. (Uchebnoe posobiia po perevodu gorno-tekhnicheskoi literatury) [Text in English with English-Russian dictionary]. No.4. 1956. 78 p. (Coal mines and mining) (MLRA 10:7)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7

VATOLIN, Yevgeniy Stepanovich; GRAMMATIKOV, A.N., otv.red.; KOROLEVA, T.I., red.izd-va; SHKLYAR, S., tekhn.red.

[Handbook for development work] Spravochnik prokhodchika podgotovitel'nykh vyrabotok. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po gornomu delu, 1961. 338 p. (MIRA 14:4)
(Mining engineering)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7

VATOLIN, Yevgeniy Stepanovich; GNEDIN, V.Ye., redaktor; ALADOVA, Ye.I., tekhnicheskiy redaktor

[Generalizing experience in conducting preparatory mine work] Obobshchenie opyta provedeniia podgotovitel'nykh vyrabotok. Moskva, Ugletekhizdat, 1955. 50 p. (MLRA 9:3)
(Kizel Basin--Coal mines and mining)

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IGNAT'YEV, A.D.; VATOLIN, Ye.S.; ADAMIDZE, D.I.

Loosening and extracting coal by long hole blasting. Ugol' 34 no.8:59-60 Ag '59. (MIRA 12:12)
(Blasting) (Coal mines and mining)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7

IGNAT'YEV, A.D., kand.tekhn.nauk; VATOLIN, Ye.S., kand.tekhn.nauk

Experience in the use of water-stemmed borehole charges for the breaking-down of coal. Vzryv.delo no.44/1:167-173 '60. (MIRA 13:7)

(Coal mines and mining--Explosives)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7

VATOLIN, Ye.S., kand.tekhn.nauk

Choosing efficient types of machines for drilling deep blastholes in the Krivoy Rog Basin. Nauch.soob.Inst.gor.dela 5:90-92 '60. (MIRA 15:1)

(Krivoy Rog Basin--Boring machinery)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7

VATOLIN, YEVGENIY STEPANOVICH

EPP.
.R9241?

VATOLIN, YEVGENIY STEPANOVICH,

OBOBSHCENIYE OPYTA PROVEDENIYA PODGOTOVITEL'NYKH VYRABOTOK (GENERALIZATION OF EXPERIENCE OF LEADING PREPARATORY PRODUCTION) MOSKVA, UGLETEKHIZDAT, 1955.

50, 2 P. DIAGRS., TABLES.

"LITERATURA": P. (52)

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VATOLIN, Ye.S.

Determining the number of boreholes in a working face. Vzryv. rab. no.3:70-78 '56. (MIRA 16:2)
(Blasting) (Boring)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7"

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VATOLIN, Ye.S., kand.tekhn.nauk

Problem of choosing efficient types of machines for boring deep blasting holes in the Krivoy Rog Basin. Trudy Inst. gor. dela 5:90-92 '60. (MIRA 14:5)

(Krivoy Rog Basin—Boring machinery)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7

TEDER, R.I., kand. tekhn. nauk; VATOLIN, Ya. S., kand. tekhn. nauk

Testing rocks for compression. Gor. zhur. no. 12:35-37 D '65. (MIRA 18:12)

1. Institut gornogo dela imeni A.A. Skochinskogo.

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7"

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[illegible], T. [illegible].

"Data on the Characteristics of the Peculiar Higher Nervous Activity of Patients Suffering From Rheumatism." Cand Med Sci, Gor'kiy Medical Inst, Gorkiy, 1954. (RZhBiol, No 3, Feb 55)

SO: Sum. No. 631, 26 Aug 55 - Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (1[illegible])

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7

VATOLINA, Lidiya Nikolayevna. Prinimal uchastiye GASHEV, B.N.
ROSHCHINA, L., red.; KIRSANOVA, I., mladshiy red.;
ULANOVA, L., tekhn.red.

[Economy of the United Arab Republic] Ekonomika Ob"edinennoi Arabskoi Respubliki. Moskva, Izd-vo sotsial'no-ekon.lit-ry, 1962. 77 p. (MIRA 15:4)
(United Arab Republic—Economic conditions)

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7

VATOLINA, M.K.

Comparative evaluation of sancafene, santonine and concentrated sancafene therapy of ascariasis. Med. paraz. i paraz. bol. no.2: 134-136 Ap-Je '54. (MLRA 7:8)

1. Iz fakul'tetskoy terapevticheskoy kliniki Kishinevskogo meditsinskogo instituta (dir. kliniki prof. N.T.Starostenko)
(ASCARIASIS, therapy,
*sancafene & santonine)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7

ARIYEVICH, A.M., professor; VATOLINA, V.M., ordinator

Vitamin D_2 for treating chromoblastomycosis. Vest.ven. i der. 30 no.4:54 Jl-Ag '56. (MLRA 9:10)

1. Iz TSentral'nogo kozhno-venerologicheskogo instituta Ministerstva zdravookhraneniya SSSR I Klinicheskoy bol'nitsy imeni Korolenko.
(DERMATOMYCOSIS) (VITAMINS--D)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7

ARIYEVICH, A.M.; VIKHREVA, O.G.; TYUFILINA, O.V.; LIVANOVA, N.K.; SHEKLAKOVA, A.A.; VATOLINA, V.M.; BLUDOVA, N.M.

Griseofulvin in the treatment of dermatomycoses. Antibiotiki 9 no.5:457-461 My '64. (MIRA 18:2)

1. Mikologicheskiy otdel (zav.- prof. A.M. Ariyevich) TSentral'nogo nauchno-issledovatel'skogo kozhno-venerologicheskogo instituta, Moskva.

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7

ARIYEVICH, A.M., prof., VATOLINA, V.M.

Result of the treatment of chromomycosis patients with amphotericin B. Vest. derm. i ven. 38 no.1:30-32 Ja '64. (MIRA 17:8)

1. Mikologicheskiy otdel (zav. - prof. A.M. Ariyevich) TSentral'nogo kozhno-venerologicheskogo instituta (dir. - kand. med. nauk N.M. Turanov) i Bol'nitsa imeni V.G. Korolenko (glavnyy vrach A.I. Pustovaya).

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7

ARIYEVICH, A.M.; VIKHREVA, O.G.; TYUFILINA, O.V.; LIVANOVA, N.K.; BLUDOVA, N.M.; VATOLINA, V.M.; SHEKLAKOVA, A.A.; KEMENEVA, M.P.; VARDASHKINA, M.A.; SOROKINA, I.I.

New trends in the treatment of fungal diseases of the skin. Sov. med. 26 no.6:52-56 Je '62. (MIRA 15:11)

1. Iz mikologicheskogo otdela (zav. - prof. A.M.Ariyevich) TSentral'nogo kozhno-venerologicheskogo instituta i klinicheskoy kozhno-venerologicheskoy bol'nitsy imeni Korolenko, Moskva.
(DERMATOMYCOSIS) (GRISEOFULVIN) (FUNGICIDES)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7

BLUDOVA, N.M., VATOLINA, V.M., SHEKLAKOVA, A.A.

Result of detection of chronic trichophytosis and favus in adults in a mycological outpatient department. Vest.derm. i ven. 32 no. 5:67-69 S-O '58 (MIRA 11:11)

1. Iz mikologicheskogo otdela (zav. - prof. A.M. Ariyevich) TSentral'nogo kozhno-venerologicheskogo instituta i klinicheskoy kozhno-venerologicheskoy bol'nitsy im. Korolenko (glavnyy vrach - zasluzhennyy vrach RSFSR V.P. Nikolayev).

(RINGWORM, epidemiol.
favus & ringworm in adults in Russia (Rus))

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7

VATOLKINA, K.

Seeds - disinfection

Evaluation of disinfectants and methods of disinfecting cotton seeds against "gommoz." Khlopkovodstvo no. 12, 1951

9. Monthly List of Russian Accessions, Library of Congress, August 1952, Uncl.

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7

VATCHENKO, K.

Cotton - Diseases and Pests

Evaluation of disinfectants and methods of disinfecting cotton seeds against "gomoz." Khlopkovodstvo no. 12, 1951

9. Monthly List of Russian Accessions, Library of Congress, August 1952 ~~1953~~, Uncl.

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7

PETROV, Aleksandr Iosifovich, prof., doktor biolog.nauk; KATOLKINA, K.A., kand.sel'skokhozyaystvennykh nauk; MARKIN, A.K., kand. sel'skokhozyaystvennykh nauk; BARANOV, M.F., red.; SOKOLOVA, N.N., tekhn.red.; DEYEVA, V.M., tekhn.red.

[Protecting cotton plants from pests and diseases] Zashchita khlopchatnika ot vreditelei i boleznei. Moskva, 1958. 486 p. (Cotton--Diseases and pests) (MIRA 12:1)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7

USSR/Plant Diseases - Diseases of Cultivated Plants. C.

Abs Jour : Ref Jour - Biol., No 1, 1958, 34937.

Author : Vatolkina, K.A.

Inst : Stavropol'skiy Institute for Agriculture.

Title : Effects of Treatment of Seeds Prior to Sowing on the Growth and Development of Winter Grain Cultures in the Arid Zone of The Region of Stavropol'.

Orig Pub : Byul. nauchno-techn. inform. Stavr. n.-i. in-ta s. kh., 1956, No 1-2, 47-51.

Abstract : In the course of the year 1954, the following chemicals have been tested for bunt smut control in the Stavropol'skiy Research Institute for Agriculture: Granosan, Granosan plus GKHTSG, Hexachlorbenzene, Hexachlorbenzene plus GKHTSG, Methylamin and solution of formalin 1 : 300.

Card 1/2

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7

USSR/Plants Diseases. Diseases of Cultivated Plants. O.

Abs Jour : Ref Zhur - Biol., No 6, 1958, 24937

The strongest disease-inhibiting effects were obtained with granosan plus GKHTCG, and granosan and formalin. Data are given on the effects of the treatment on seed germination, bushiness, speed of growth, development and yield. Cited are the recommendations of the Stavropol'skiy Selection Station for seed treatments prior to sowing of other summer grain cultures. -- Guzhev.

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K. A. VATOLKINA

ZASHCHITA KHLOPCHANTNIKA OT VREDITELEY I BOLEZNEY (SAFEGUARDING COTTON PLANTS FROM INSECT PESTS AND DISEASE, BY)
A.J. PETROV, KA. VOTOLKINA (1) A. K. MARKIN. MOSKVA, SEL'KHOZGIZ, 1958

486 p. ILLUS., DIAGRS., GRAPHS, TABLES
"LITERATURA": P. 457-474

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7

VATOLKINA, K. A.

USSR/Plant Diseases. Diseases of Cultivated Plants Q-3

Abs Jour : Ref Zhur-Biol., No 8, 1958, 34937

Author : ~~Vatolkina K. A.~~
Inst : Stavropol Scientific Research Agricultural Institute.
Title : Effect of the Pre-Planting Processing of Seeds on the Growth and Development of Spring Grain Crops in the Arid Zone of Stavropol Kry. (Fliyaneye predposevnoi obrabotki semyan na rost i razvitiye yarovikh zernovikh kul'tur v za-sushlivoi zone Stavropol'skovo Kraya.

Orig Pub : Byul. nauchno-tekhn. inform. Stavrop. n.-i. in-ta c kh., 1956, No 12, 47-51

Abstract : Granozan, granozan+GKhTsG, hexachlorobenzene, hexachlorobenzene+GKhTsG, mercuran, and a solution of formalin 1:300 were tested against powdery

Card 1/2

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7

VATOLKINA-MESTIFEYEVA, K. A.

"The Fight Against Diseases of the Cotton Plant in Nonirrigated Cotton-Sowing Regions, Moscow, 1951, 40 pp.

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7

SOV/76-33-11-1/47

5(4)

AUTHOR: Vatollo, V. V.

TITLE: Data From the All-Union Conference on Thermodynamics and on the Structure of Solutions (January 1958). Application of the Variation Method in Calculating the Distribution Function of Molecules in the Liquid

PERIODICAL: Zhurnal fizicheskoy khimii, 1959, Vol 33, Nr 11, pp 2393-2396 (USSR)

ABSTRACT: This paper and the following nine in this periodical were read at the Conference mentioned in the title in January 1958. It has already been established that the postulation of the "superposition approximation" according to Kirkwood is not valid for all models of liquids (Ref 6) and, thus, a theoretically calculated binary distribution function causes greater errors in the thermodynamic quantities (Ref 7). There are two conditions which permit its use, either a low degree of density or a low interaction energy, i.e. only in one of the above cases the potential of the mean power $\phi(1,2)$ passes over to the interaction potential of the pairs of molecules. Based on a generalization of the "superposition approximation" an

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7

SOV/76-33-11-1/17

Data From the All-Union Conference on Thermodynamics and on the Structure of Solutions (January 1958). Application of the Variation Method in Calculating the Distribution Function of Molecules in the Liquid

integral equation (11) was derived for the binary distribution function which in the two last-mentioned cases passes over to the equation according to Bogolyubov - Born - Green. It is assumed that equation (11) describes more accurately the behavior of the binary distribution function at relatively close spacings than the corresponding equation of the theory based on the "superposition approximation". The advantage of this derivation is that the difficulties which arise because of the deviation from the integrals on the passage to the limit of $N \to \infty$, $V \to \infty$ according to Richardson (Ref 2), are automatically eliminated by the normalization of the correlative distribution function. Gratitude is expressed to Professor M. I. Shakhparonov, Doctor of Chemical Sciences, for his support. There are 9 references, 4 of which are Soviet.

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9,3150

S/058/62/000/003/037/092
A061/A101

AUTHORS: Bogdanov, A. V., Vatollo, V. V.

TITLE: Ion oscillations in plasma

PERIODICAL: Referativnyy zhurnal, Fizika, no. 3, 1962, 68 - 69, abstract 3B553 ("Tr. Vses. zaochn. energ. in-ta", 1961, no. 17, 31 - 36)

TEXT: Ion oscillations in plasma are considered on the basis of Vlasov's equation which is linearized with respect to the Maxwell distribution with disturbed velocity distribution. The dispersion equation is obtained. When assuming the electron temperature to diverge from the ion temperature, the sustained ion oscillations with ionic plasma frequency are found. B. Davydov's result (RZhFiz., 1959, no. 6, 13495) is also obtained for the case when there is no divergence of temperatures. The group velocity of propagation of ion oscillations in plasma is established.

L. Maksimov

[Abstracter's note: Complete translation]

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ACCESSION NR: AP4017589 S/0109/64/009/002/0201/0210

AUTHOR: Bol'shakov, I. A.; Bugachev, G. F.; Vatollo, V. V.

TITLE: Discerning the parameters of signals separated from noise

SOURCE: Radiotekhnika i elektronika, v. 9, no. 2, 1964, 201-210

TOPIC TAGS: signal noise discrimination, mixed signals separation, mixed signals separation theory, mixed signals noise separation

ABSTRACT: The problem of optimum Bayes filtration 1 of random-variable parameters of kindred signals received as a mixture with a noise background is solved. An optimum "measuring filter" is suggested whose special device can discriminate the parameters by the form of their coding in the mixture and by the nature of their time variation. Measuring time delays of two pulsed periodic signals of like shape, against a normal white background, is considered as a "practical example" illustrating the theory. It is inferred that the theory can be

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ACCESSION NR: AP4017589

used for designing a separator of 2-3 statistically close signals; however, with a higher number of signals, the number of alternatives rises so rapidly (as 1!) that it would be more reasonable to use, e.g., a quasi-optimum method of successive alternative-pair comparisons. Another limitation of the theory is that, in the process of observation, the decision as to the number of signals is not reconsidered and the signals are regarded as finally solved. Orig. art. has: 2 figures and 40 formulas.

ASSOCIATION: none

SUBMITTED: 07May62 DATE ACQ: 18Mar64 ENCL: 00

SUB CODE: CO NO REF SOV: 004 OTHER: 000

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859020018-7

ACCESSION NR: AP4038606 S/0109/64/009/004/0563/0570

AUTHOR: Bol'shakov, I. A.; Vatollo, V. V.; Laty*sh, V. G.

TITLE: Methods for detecting and measuring an unknown number of signals based on the random-point theory

SOURCE: Radiotekhnika i elektronika, v. 9, no. 4, 1964, 563-570

TOPIC TAGS: radar, radar signal detection, decision theory, random point theory

ABSTRACT: An attempt is made to unite the decision theory and the theory of correlated random points for solving the problem of signal observation (detection and measurement). An unknown number of (radar) signals are received mixed with noise. The mean-risk function is set up, and the Bayes decision operators, which ensure the highest quality of signal measurement and resolution, are determined. The general structure of a detector-measurer is figured out on the

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