

TOPORISHCHEV, G.A.; YESIN, O.A.; KALUGIN, V.N.

Silicon passage from molten iron into slag on the anode.
Izv. vys. ucheb. zav.; Chern. met. 7 no.2:19-25 '64.
(MIRA 17:3)

1. Ural'skiy politekhnicheskiy institut.

KALUGIN, V.N.; YESIN, O.A.; TOPORISHCHEV, G.A.

Simultaneous determination of the diffusion coefficients of silicon and manganese in liquid cast iron and steel by the chronopotentiometric method. Fiz. met. i metalloved. 17 no.1:88-93 Ja '64. (MIRA 17:2)

1. Ural'skiy politekhnicheskiy institut im. S.M.Kirova.

DOBRYDEN', A.A.; YESIN, O.A.; CHUCHMAREV, S.K.

Kinetics of the desulfuration of pig iron and slag by direct
and alternating currents. Izv. vys. ucheb. zav.; Chern. met. 7
no.2:5-12 '64. (MIRA 17:3)

1. Ural'skiy politekhnicheskiy institut.

8/0279/64/000/002/0026/0030

ACCESSION NR: AP4029831

AUTHOR: Khly^unov, V. V. (Sverdlovsk-Zlatoust); Yes^uin, O. A. (Sverdlovsk-Zlatoust);
Khasin, G. A. (Sverdlovsk-Zlatoust); Vachugov, G. A. (Sverdlovsk-Zlatoust); Sorokin,
Yu. V. (Sverdlovsk-Zlatoust)

TITLE: On the mechanism of extracting nonmetallic impurities from steel drops in
slag

SOURCE: AN SSSR. Izv. Metallurgiya i gornoye delo, no. 2, 1964, 26-30

TOPIC TAGS: ShKh-15 steel, ANF-6 slag, EI-736 steel, impurity, extraction

ABSTRACT: The authors investigated the passing of ShKh-15 steel drops through a
layer of fused ANF-6 slag and its purification from non-metallic impurities. The
amount of large impurities decreased during this process to a greater degree than
did the fine impurities. Impurities larger than 10 μ , present in the initial metal,
disappeared completely. This cannot be the result of flotation, since the metal of
the mobile drop was intensely agitated. It was experimentally shown that the con-
tent of solid, non-metallic impurities in ShKh-15 and EI-736 steels decreased by
passing drops through an ANF-6 slag layer. The content of the impurities decreased
with an increase of the path length in accordance with the law of attenuation.

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ACCESSION NR: AP4029831

Larger impurities were extracted faster than fine impurities. The higher the impurity concentration, the more rapidly they were eliminated from the metal. The impurity content in large drops fell slower than in fine drops. The obtained regularities were qualitatively and quantitatively clear, stemming from a definite mechanism impurity extraction. It was assumed that the internal eddy movements of the impurity delivers the drops to the surface layer which remained there without returning into the metal. Orig. art. has: 3 figures and 2 formulas.

ASSOCIATION: none

SUBMITTED: 18Oct63

DATE ACQ: 30Apr64

ENCL: 00

SUB CODE: ML

NO REF SOV: 008

OTHER: 000

Card 2/2

SURGIN, B.I. (Sverdlovsk); YANK, V.V. (Sverdlovsk); SHINSENKH, B.V.
(Sverdlovsk).

Investigating the kinetics of the interaction of sulfides and
oxides by the method of anodic polarization. Izv. AN SSSR
Met. i gor. delo no. 311-50 (1964) (MIRA 27:3)

KHLYNOV, V. V.; SOROKIN, Yu. V.; YESIN, O. A.; KHASIN, G. A.; VACHUGOV,
G. A.

Character of the movement of steel drops in slag. *Izv. vys.ucheb.
zav.; chern.met.7 no. 5:22-25 '64.* (MIRA 17:5)

1. Ural'skiy politekhnicheskiy institut i Zlatoustovskiy
metallurgicheskiy zavod.

DOBRYDEN', A. A.; YESIN, O. A.; CHUCHMAROV, S. K.

Intensifying the desulfuration of cast iron by the electrolysis
of slag. Izv. vys. ucheb. zav.; chern. met. 7 no.6:11-16 '64.
(MIRA 17:7)

1. Ural'skiy politekhnicheskii institut.

CHUCHMAREV, S.K.; YESIN, O.A.; KAMYSHOV, V.M.; DOBRYDEN', A.A.

Kinetics of nitrogen dissolution in fused iron-free slags.
Izv. vys. ucheb. zav.; chern. met. 7 no.9:11-15 '64.
(MIRA 17:6)

1. Ural'skiy politekhnicheskii institut.

DOBRIDEN', A.A.; YESIN, O.A.; CHUCHMAREV, S.K.

Electrochemical desulfuration of varying basicity alegs.
Izv. vys. ucheb. zav.; Chern. met. 7.no.11:21-23 '64.

(MIRA 17:12)

1. Ural'skiy politekhnicheskiy institut.

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

Viscosity and electric resistance of manganese alloys with silicon,
iron, and carbon. Zhur. neorg. khim. 9 no.8:1911-1914 Ag '64.
(MIRA 17:11)

ACCESSION NR: AT4035155

8/2765/64/000/000/0148/0153

AUTHOR: Manakov, A. I.; Yesin, O. A.; Lepinskikh, B. M.

TITLE: Thermoelectromotive forces and the electrical conductivity of vanadium and niobium pentoxides

SOURCE: Konferentsiya po fiziko-khimicheskim osnovam proizvodstva stali. 6th, 1961. Fiziko-khimicheskiye osnovy* proizvodstva stali (Physicochemical basis of steel production); trudy* konferentsii. Moscow, Izd-vo "Nauka," 1964, 148-153

TOPIC TAGS: vanadium, niobium, vanadium pentoxide, niobium pentoxide, electrical conductivity, thermoelectromotive force, metal oxide conductivity

ABSTRACT: To confirm the previously established occurrence of conductive electrons in many solid and molten oxides, the authors measured the electrical conductivity and thermoelectromotive forces of solid and molten V_2O_5 and Nb_2O_5 , identified the nature of the conductivity by calculating the energy of activation and evaluated the number and mobility of current carriers. Electrical conductivity was measured with a bridge circuit using an EO-7 electron oscillograph and a ZG-11 audlogenerator. The electrodes were 0.5 mm platinum wires, and the temperature was measured with a platinum-platinum-rhodium thermocouple immersed in the melt. The crucible was of zirconium dioxide in a carbon-resistance oven.

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ACCESSION NR: AT4035155

The temp in V_2O_5 was measured in a 18 mm diameter quartz U-tube, placed in a crucible furnace with a thermostat. From both tube ends, platinum-platinum-rhodium thermocouples were immersed into the molten V_2O_5 and the cold thermocouple junctions were connected to a PPTB-1 potentiometer which measured the t° and temp in both parts of the melt. The temp in Nb_2O_5 was measured in a ZrO_2 cylindrical crucible (d = 25 mm, h = 100 mm) placed in a carbon-resistance quartz-lined oven. The lower crucible section was thermoinsulated which produced a thermal gradient over the crucible height, thus permitting the determination of temp with the use of thermocouples. The results shown in Figs. 1 and 2 of the Enclosure indicate that the oxides are electron semiconductors with intrinsic conductivity in the liquid state and admixture-induced conductivity in the solid state. Orig. art. has: 4 figures, 5 formulas and 1 table.

ASSOCIATION: none

SUBMITTED: 00

DATE ACQ: 30Apr64

ENCL: 02

SUB CODE: MM, EM

NO REF SOV: 014

OTHER: 006

Card 2/4

ACCESSION NR: AT4035156

ENCLOSURE: 01

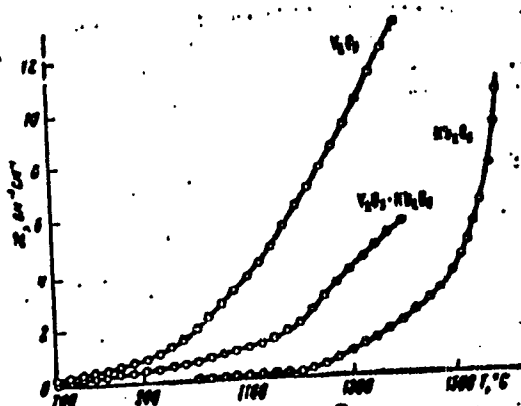


Fig. 1. Variation in the electrical conductivity of the compounds V_2O_5 , Nb_2O_5 and $\text{V}_2\text{O}_5 \cdot \text{Nb}_2\text{O}_5$ with temperature.

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ACCESSION NR: AT4036166

ENCLOSURE: 02

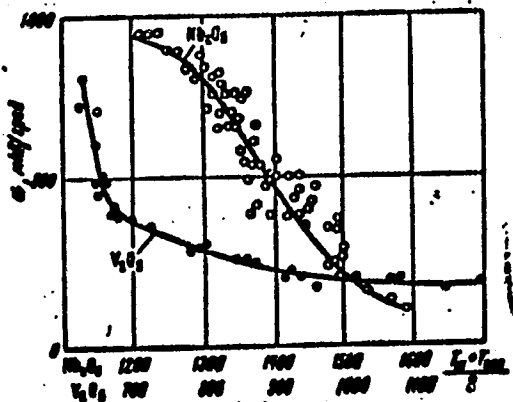


Fig. 2. Variation in the differential thermoelectromotive force of V_2O_5 and Nb_2O_5 with temperature.

Card 4/4

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.

LEPINKIN, B.M.; YEFIN, O.A.

Study of the processes of modification of cast iron by means
of high temperature galvanic cells. Izv. lab. 30 no.5:568-
570 '64. (MIRA 12-6)

1. Institut metallurgii Ural'skogo Filiala AN SSSR.

KALUGIN, V.N.; YESIN, O A.; TOPORISHCHEV, G.A.

Electrode polarization and diffusion coefficients of sulfur and
aluminum in liquid iron saturated with carbon. Ukr. khim. zhur.
30 no.8:817-823 '64. (MIRA 17:11)

ACCESSION NR: AP4039619

s/0076/64/038/005/1148/1153

AUTHORS: Boronenkov, V.N. (Sverdlovsk); Yesin, O.A. (Sverdlovsk);
Shurygin, P.M. (Sverdlovsk)

TITLE: Kinetics of metal deposition from aluminate melts on a disk
electrode

SOURCE: Zhurnal fizicheskoy khimii, v. 38, no. 5, 1964, 1148-1153

TOPIC TAGS: rotating disk electrode, commutator, diffusion coefficient, electron discharge, cathode discharge, manganese, chromium, silicon, vanadium, calcium aluminate, calcium oxide, aluminum oxide, polarization curve, current density, activation energy, natural convection, liquid electrode

ABSTRACT: A disk electrode (molybdenum or chromium cylinder) combined with a commutator was used for determining the ion diffusion coefficient D and the number of electrons z (valence) participating in the process of cathode discharge of manganese, chromium, silicon and vanadium ions from a calcium aluminate solution. Measurements were taken at 1370-1470C; the electrolyte contained 47% CaO, 47% Al_2O_3 and 6% MgO and had a high dissociation potential and low viscosity. The

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ACCESSION NR: AP4039619

ions under study were introduced in 1-4% concentrations as SiO_2 , V_2O_5 , Cr_2O_3 and MnO . Results are graphed and tabulated and the formulas presented. The polarization curves for Mn, Si and V deflected from the background at comparatively low potentials (2nd branch) as did Cr on a molybdenum cathode, while Cr discharge at the chromium cathode starts at close to zero polarization. In an oxidizing atmosphere (air) and at a large CaO content in the electrolyte the V, Si, Cr and Mn ions discharged at the cathode release 5, 4 and 2 electrons (z) respectively. The interaction between Cr_2O_3 and C, and Mn_2O_3 with Mn proceeds rapidly and was not significantly reflected in the process under study. The limiting current densities depend upon the square root of the angular rate of electrode rotation ($\sqrt{\omega}$). They were found at 0.2 - 3 a/cm² and agree with those found in the literature. The diffusion coefficients at various temperatures and for certain concentrations are presented. They agree with those found in the literature only for the lower temperature values. The D_{Mn} , very high, may be caused by the formation of a

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ACCESSION NR: AP4039619

fluid Mn film on the disk cathode at these temperatures. The difference in the order of magnitude of the diffusion coefficient of Si and V (lattice building) and Mn (modifying) is discussed. The activation energies, at 100 kcal/mole for Si, V, Cr and 76 for Mn, are also much higher than those found in the literature. Natural convection greatly affects the results of measurements with liquid electrodes. Orig. art. has: 4 figures, 8 formulas and 1 table.

ASSOCIATION: Ural'skiy polytekhnicheskiy institut im. S. M. Kirova (Ural Polytechnical Institute)

SUBMITTED: 17May63

ENCL: 00

SUB CODE: GC, GP

NR REF SOV: 016

OTHER: 002

Card

3/3

YESIN, O.A.; SOTNIKOV, A.I.; NEKITIN, Yu.F.

Temperature dependence of the double layer capacity in molten oxides.
Dokl. AN SSSR 158 no.5:1149-1151 O '64. (MIRA 17:10)

1. Ural'skiy politekhnicheskii institut im. S.M.Kirova. Predstavleno
akademikom A.N.Frunkinym.

BORONENKOV, V.N.; YESIN, O.A.; SHURYGIN, P.M.

Electrochemical study of the kinetics of iron reduction by
graphite from molten oxides. Dokl. AN SSSR 160 no.1:151-153
Ja '65. (MIPA 18:2)

1. Ural'skiy politekhnicheskii institut im. S.M. Kirova. Sub-
mitted July 2, 1964.

SOTNIKOV, A.I. (Sverdlovsk); YESIN, O.A. (Sverdlovsk); NIKITIN, Yu.P.
(Sverdlovsk)

Studying the kinetics of the desulfuration of cast iron by slag,
by the method of alternating current polarization. Izv. AN SSSR.
Met. no.1:32-38 Ja-F '65. (MIRA 18:5)

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

CHUCHMAREV, S.K.; YESIN, O.A.; KAMYSHOV, V.M.

Form of nitrogen existing in molten nonferrous slags. Izv. vys.
ucheb. zav.; chern. met. 8 no.2:5-9 '65.

(MIRA 18:2)

1. Ural'skiy politekhnicheskiy institut.

YESIN, R.A.

GUREVICH, D.B.; YESIN, R.A.; PRCKOP'YEV, V.K.

Some properties of low-voltage electric impulse discharges.

Izv. AN SSSR. Ser. fiz. 19 no.1:64-65 Ja-P '55.

(MIRA 8:9)

(Spectrum analysis) (Spectrometer)

PASTUKHOV, T.A. (Sverdlovsk); YESIN, O.A. (Sverdlovsk); CHUCHMAIEV, S.K.
(Sverdlovsk)

Kinetics of the oxidation of divalent iron in slag by gaseous
oxygen. Izv. AN SSSR. Met. no.4:51-56 J1-Ag '65.

(MIRA 18:8)

PASTUKHOV, E.A.; YESIN, O.A.; CHUCHMAREV, S.K.

Particular characteristics of the diffusion of iron ions in molten aluminosilicates. Elektrokimiya 1 no.1:78-83 Ja '65. (MIRA 18:5)

1. Ural'skiy politekhnicheskii institut im. S.M. Kirova.

BORONENKOV, V.N.; YESIN, O.A.; SHURYGIN, P.M.

Anodic processes on a disk electrode in oxide melts. *Elektrokhimiya*
1 no.5:592-596 My '65. (MIRA 18:6)

1. Ural'skiy politekhnicheskiy institut imeni Kirova.

SRIVALIN, I.T.; YESIN, O.A.

Application of the quasichemical theory to calculate the activity of silicate melt components. Izv. vys. ucheb. zav.; Chern. met. 8 no.10:14--21 '65. (MIRA 18:9)

1. Permskiy politekhnicheskiy institut i Ural'skiy politekhnicheskiy institut.

BORONENKOV, V.N.; YESIN, G.A.; SHURYGIN, P.M.

Kinetics of deposition of metals from fused fluorides on a disk electrode. Zhur. fiz. khim. 38 no.5.3748-1153 ny '64.

(U.S.S.R.) 18:12

1. Ural'skiy politekhnicheskii institut imeni Kirova. Submitted May 17, 1963.

SRIVALIN, I.T.; YESIN, O.A.; LEPINSKIKH, B.M.

Thermodynamic properties of magnesium solutions in nickel,
lead, and silicon. Zhur. fiz. khim. 38 no.5:1166-1172 My '64.
(MIRA 18:12)

1. Institut metallurgii Ural'skogo filiala AN SSSR, Ural'skiy
politekhnicheskii institut i Permskiy politekhnicheskii institut.
Submitted May 23, 1963.

PASTUKHOV, E.A.; YESIN, G.A.; CHUCHMAREV, S.K.

Form of ions present in molten slags. Zhur. fiz. khim. 38
no.5:1306-1310 My '64. (MIRA 18:12)

1. Ural'skiy politekhnicheskii institut. Submitted June 8, 1963.

VOSTRYAKOV, A.A. (Sverdlovsk); VATOLIN, N.A. (Sverdlovsk); YESIN, 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.

KAMYSHOV, V.M.; YESIN, O.A.; CHUCHMAREV, S.K.; DOBRYDEN', A.A.

Effect of the electric current on the rate of nitrogen dissolution
in molten oxides. Elektrokimiia 1 no.2:227-230 F '65.
(MIRA 18:6)

1. Ural'skiy politekhnicheskii institut imeni Kirova.

BORONENKOV, V.N.; YESIN, O.A.; SHURYGIN, P.M.; KUKHTIN, B.A.

Polarization curve method of studying the ^Pkinetics of the direct
reduction of iron from fused oxides. Elektrokhimiya 1 no.10:1245-
1252 0 '65. (MIRA 18:10)

1. Ural'skiy politekhnicheskij institut imeni Kirova.

DERYABIN, A.A.; FOFEL', S.I.; YESIN, O.A.

Effect of the polarization of liquid copper on its
interphase tension with slags. Izv.vys.ucheb.zav.
tsvet.met. 8 no.2:32-38 '65. (MJRA 19:1)

1. Kafedra teorii metallurgicheskikh protsessov Ural'skogo
politekhnicheskogo instituta. Submitted November 29, 1963.

SRYVALIN, I.T.; YESIN, O.A.; KORPACHEV, V.G.

Calculating the heat of oxide mixing by the properties of
ions composing them. Izv. vys. uchob. zav.; Chern. mol. 2
no.11:9-13 '65. (MIRA 18:11)

1. Ural'skiy politekhnicheskii institut i Permakiy politekhnicheskii institut.

PAVLOV, V.V.; POPEL', S.I.; YESIN, O.A.

Calculation of the surface tension and adsorption of the components on the interface of condensed phases. Zhur. fiz. khim. 39 no. 1214-218 Ja '65 (MIRA 19:1)

1. Ural'skiy politekhnicheskiy institut. Submitted February 18, 1964.

DERYABIN, A.A.; YESIN, O.A.; POPEL', S.I.

Specific features of electrocapillary curves in oxide melts.
Zhur. fiz. khim. 39 no.4:966-972 Ap '65.

(MIRA 19:1)

1. Ural'skiy politekhnicheskiy institut. Submitted April 14,
1964.

SRYVALIN, I.T.; YESIN, O.A.; KORPACHEV, V.G.

Evaluation of the heats of mixing of salt solutions according
to ionic characteristics. Usp. khim. 35 no.1:3-20 Ja '66.
(MIRA 19:1)

1. Ural'skiy politekhnicheskii institut imeni S.M. Kirova i
Permskiy politekhnicheskii institut.

L 16133-66 EPF(a)-2/EWP(z)/EWT(m)/ETC(f)/ENG(m)/EWA(d)/EWP(e)/EWP(t)

ACC NR: AP6004185 IJP(c) SOURCE CODE: UR/0076/66/040/001/0262/0263
WE/WV/JD/JG/WB

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73
B

AUTHOR: Kamyshov, V. M.; Yesin, O. A.; Chuchmarev, S. K.

ORG: Ural Polytechnic Institute im. S. M. Kirov (Ural'skiy politekhnicheskiy institut)

TITLE: Wetting of transition metal nitrides by molten oxides and metals

SOURCE: Zhurnal fizicheskoy khimii, v. 40, no. 1, 1966, 262-263

TOPIC TAGS: nitride, transition metal, copper, iron, calcium oxide, aluminum oxide, silicon dioxide, carbon alloy, surface tension, wetting

ABSTRACT: The contact angle θ of wetting of transition metal (Ti, V, Nb, Cr, Mo, Zr) nitrides by copper^{14,53} and iron (99.9% Fe), iron-carbon alloy (0.5% C), ShKh-15 steel, and molten oxides (I - 50% CaO, 50% Al₂O₃; II - 40% CaO, 40% SiO₂, 20% Al₂O₃) was measured at 1500 - 1550C by the sessile drop method. The contact angle of wetting by copper of solid transition metal nitrides was found to be large and independent of the nature of the nitride. On the contrary, in the case of wetting by iron, steel, and oxide

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ACC NR: AP6004185

melts, θ decreases with increasing acceptor capacity criterion $1/Nn$, where n is the number of electrons in the d subshell and N is the principal quantum number of the d -subshell level. As the different nitrides are considered, differences observed in the change of θ from one case to another are due to both the surface tension and the interfacial tension at the solid-liquid interface. Orig. art. has: 1 figure and 1 formula.

SUB CODE: 07/1 SUBM DATE: 10May65/ ORIG REF: 003

Liquid metal 18

Card 2/2

ACC NR: AM6032822

Monograph

UR/

Yesin, Oleg Aleksandrovich; Gel'd, Pavel Vladimirovich

Physical chemistry of pyrometallurgical processes. pt. 2: Interactions with the aid of fusions (Fizicheskaya khimiya pirometallurgicheskikh protsessov. ch. 2: Vzaimodeystviya s uchastiyem rasplavov) 2d ed., rev. and enl. Moscow, Izd-vo "Metallurgiya," 1966. 702 p. illus., biblio. Errata slip inserted. 6000 copies printed.

TOPIC TAGS: liquid metal, molten metal, refractory metal, slag, glass, liquid metal property, slag property, glass property

PURPOSE AND COVERAGE: This book is intended for scientific workers and engineers, as well as for students wishing to deepen and broaden their knowledge of the theory of metallurgical processes. The book, which is the second of two parts, examines the structural peculiarities of liquid metals, glasses, and molten slags, equilibrium conditions, the mechanism and speed of reaction of gasses with liquid metals and slags, as well as of liquid metals with slags (desulphurization, dephosphorization, and decarbonization). In describing the various reactions involving liquid phases, considerable attention is devoted to their molecular-kinetic analysis. There are 1101 references, 832 of which are Soviet.

Card 1/4

UUC: NONE

ACC NR: AM6032822

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ACC NR: AH6032822

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SUB CODE: 07,11/ SUBM DATE: 11May66/ ORIG REF: 700/ OTH REF: 333/

Card 4/4

L 08191-67

ACC NR: AF6030498

vidently due to the presence of large deviations of the heat capacity from Kopp's law; 3) the dependence of the activities of the components on the composition, to a known approximation, can be described by the formulas for regular solutions; 4) the thermodynamic data obtained agree satisfactorily with the results of calorimetric and electronographic investigations. Orig. art. has: 5 formulas, 5 figures and 3 tables.

SUB CODE: 07, 20/ SUBM DATE: 27Mar65/ ORIG REF: 008/ OTH REF: 001

Card 2/2 dda

ACC NR: AT7004214

(N)

SOURCE CODE: UR/0000/65/000/000/0214/0218

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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ACC NR: AT7004214

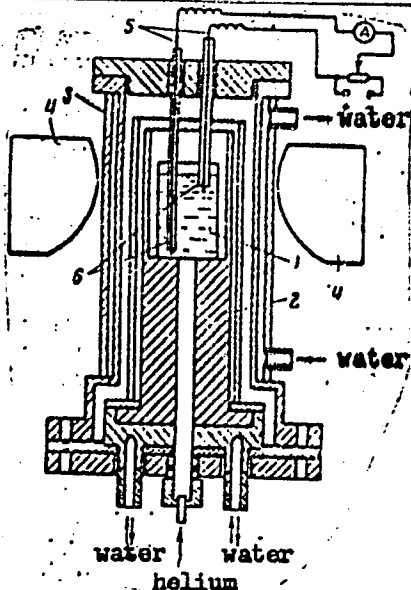


Fig. 1. Schematic of the experimental installation.

- 1 - alumina crucible;
- 2 - electrographite resistance furnace;
- 3 - water-cooled jacket;
- 4 - poles of electromagnet;
- 5 - tungsten electrodes;
- 6 - alumina tubes

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

SUB CODE: 11/

SUBM DATE: none/

ORIG REF: 003

Card 2/2

ALIKHANYAN, A.I.; KHEYFETS, S.A.; YESIN, S.K.

Electron and positron storing devices. Usp. fiz. nauk 81 no.1:
7-49 8 '63. (MIRA 16:12)

"APPROVED FOR RELEASE: 03/15/2001

CIA-RDP86-00513R001962920013-8

APPROVED FOR RELEASE: 03/15/2001

CIA-RDP86-00513R001962920013-8"

YESIN, V.

Shipping crude petroleum with the aid of pusher tugs. Rech. transp.
24 no.5:24-25 '65. (MIRA 18:9)

1. Glavnyy inzh. Irtyshskogo parokhodstva.

YESIN, V.

First demonstration of electric plowing. IUn.telkh. 4 no.4:6-10
Ap '60. (MIRA 13:9)
(Flowing) (Electricity in agriculture)

USSR/Electronics YESIN, V. A.

Card 1/1

Author : Yevtyanov, S. I., Kamenskiy, Ye. I., and Yesin, V. A.

Title : Investigation of a quartz self-excited oscillator according to the Shembel' circuit

Periodical : Radiotekhnika 9, 36-46, Mar/Apr, 1954

Abstract : Presents methods for calculating a quartz self-excited oscillator according to the Shembel' circuit and methods for analyzing a self-excited oscillator at a partially linear idealization of static characteristics of vacuum tubes. Comparison is made of results derived by calculation and experimentation. Appearance of oscillatory hysteresis was discovered. Four references: 3 USSR., 1 USA.

Institution :

Submitted : December 6, 1952

I 24728-66

ACC NR: AP6005400

(A)

SOURCE CODE: UR/0323/65/000/005/0003/0009

AUTHOR: Poznyakov, Yu. I. (Engineer); Yesin, V. A. (Candidate of technical sciences);
Ovchinnikov, S. I. (Candidate of technical sciences); Chertkov, B. G. (Engineer)

ORG: [Poznyakov; Yesin] Moscow Technological Institute of Light Industry (Moskovskiy
tekhnologicheskii institut legkoy promyshlennosti); [Ovchinnikov] All-Union correspon-
dence Institute of Textiles and Light Industry (Vsesoyuznyy institut tekstil'noy i
legkoy promyshlennosti); [Chertkov] Lvov Company "Progress" (L'vovskaya firma
"Progress")

TITLE: Organizational and technical development of footwear production and industrial
structure of a factory

SOURCE: IVUZ. Tekhnologiya legkoy promyshlennosti, no. 5, 1965, 3-9

TOPIC TAGS: industrial production, industrial plant, footwear

ABSTRACT: This article deals with the structure and production of a footwear factory.
The production structure of a footwear factory must be at the level of organizational
and technical development of production. Reorganization of the production structure
of footwear factories must be carried out on the level of the improvement of technical
procedures, technology, and organization of production. [NT]

SUB CODE: 11/

SUBM DATE: 16Apr65/

ORIG REF: 007/

Card 1/1 7/1/65

S/0170/64/000/006/0108/0113

ACCESSION NR: AP4041074

AUTHORS: Morozov, I. I.; Yesin, V. I.

TITLE: Polytropic index determination of gas expansion in high pressure vessels

SOURCE: Inzhenerno-fizicheskiy zhurnal, no. 6, 1964, 108-113

TOPIC TAGS: gas expansion, high pressure vessel, expansion law, polytropic index, heat transfer, specific heat

ABSTRACT: The processes of gas expansion in high-pressure vessels were considered, with the gas obeying various expansion laws. Expressions to be used in engineering calculations were derived for instantaneous polytropic expansion indices and the gas pressure in the vessel. The instantaneous polytropic index was defined by

$$n = k - (k-1) \frac{dQ/dt}{G_p RT_p}$$

An average value for n is then obtained for the expansion process $p_p = p_{p0} (1 + Ct)^{\frac{2n}{n-1}}$ where

$$C = \frac{n-1}{2V_p} \mu m_f R \sqrt{T_p}$$

Card 1/2

ACCESSION NR: AP4041074

$$\bar{n} \approx k - \frac{2.1B}{1 + \frac{2.1}{k-1} B^{.30}}$$

This yields the result in good agreement with experiments. Analogous expressions were derived for the pressure in the vessel and for \bar{n} under the conditions $C_p, C_v = \text{const}$. This yields for the pressure

$$p_s = p_{s0} - \frac{\bar{n}}{V} p_0 v t$$

and for \bar{n} (approximately)

$$\bar{n} \approx 1 + \frac{k-1}{1 + \epsilon_1 B_1}$$

$$B_1 = \frac{B_1}{k-1}; \epsilon_1 = f(\pi_s)$$

where ϵ_1 can be further approximated by $\epsilon_1 \approx 0.058(1 - \pi_s)$. Orig. art. has: 33 formulas and 4 figures.

ASSOCIATION: Politekhnikheskiy institut g. Chelyabinsk (Polytechnic Institute, Chelyabinsk)

SUBMITTED: 16Sep63

ENCL: 00

SUB CODE: TD

NO REF SOV: 003

OTHER: 000

Card 2/2

YESIN, V.O.

Preferred growth orientation of crystals with a cubic lattice.
Fiz. met. i metalloved. 20 no.2:226-230 Ag '65. (MIRA 18:9)

1. Institut fiziki metallov AN SSSR.

"APPROVED FOR RELEASE: 03/15/2001

CIA-RDP86-00513R001962920013-8

APPROVED FOR RELEASE: 03/15/2001

CIA-RDP86-00513R001962920013-8"

YESIN, V.O.; KRALINA, A.A.

X-ray investigation of the effect of growth and orientation of
crystallites in aluminum bicrystals on the degree of their
perfection. Fiz. met. i metalloved. 13 no.4:577-586 Ap '62.
(MIRA 16:5)

1. Institut fiziki metallov AN SSSR.
(Aluminum crystals) (X-ray crystallography)

126-2-8/35

On the mechanism of reaction diffusion in the systems Cu-Se, Cu-Te, Ag-Se and Ag-Te.

the temperature range being 450 to 600°C. On the basis of results it is concluded that the scale forming in the diffusion systems Ag-Se and Ag-Te have a phase composition and a microstructure fully analogous with the scale in the systems Cu-Se, Cu-Te; in all these systems the scale is of a single phase and consists respectively of Ag_2Se , Ag_2Te , Cu_2Se and Cu_2Te . In the systems Cu-Se,

Cu-Te, Ag-Se and Ag-Te the concentration gradient in the scale in the direction normal to the surface of the specimen (along acicular or flat crystals) is so small that it does not manifest itself in the lattice parameter above the metering error of the order of 0.002 to 0.003 Å. The crystallo-chemical character of the phase lattices which form the scale and orientation of crystals in the systems Cu-Se and Cu-Te creates favourable conditions for higher diffusion speed of the metal along acicular or flat crystals towards their external ends; the systems Ag-Se and Ag-Te permit similar considerations. The process of reaction diffusion in the systems under consideration are apparently limited by the reactions at the boundary metal-scale.

Card 2/3

On the mechanism of reaction diffusion in the systems Cu-Se, Cu-Te,
Ag-Se and Ag-Te. 126-2-8/35

There are 5 references, 2 of which are Slavic.

SUBMITTED: December 28, 1956.

ASSOCIATION: Ural State University imeni A. M. Gor'kiy.
(Ural'skiy Gosudarstvennyy Universitet imeni A.M.Gor'kogo).

AVAILABLE: Library of Congress.

Card 3/3

S/126/60/010/002/022/028/XX
E201/E491

AUTHOR: Yesin, V.O.

TITLE: Directions of Preferential Growth of Metal Crystals
From Melt ²¹

PERIODICAL: Fizika metallov i metallovedeniye, 1960, Vol.10, No.2,
pp. 233-239

TEXT: Preferential growth in some directions indicates internal anisotropy in crystal structure. Preferential growth usually appears in the form of texture or definite orientation of dendritic axes. Rosenberg and Tiller (Ref.2) found that zone purification of lead altered its preferential growth direction in the columnar region from the usual $\langle 100 \rangle$ to $\langle 111 \rangle$. Rosenberg and Tiller concluded that the usual $\langle 100 \rangle$ preferential growth is due to the presence of even very small amounts of impurities (e.g. 0.005% Ag in Pb). The present paper gives a discussion of preferential crystal growth in very pure metals on the basis of anisotropy of growth of various crystal faces. The probability of appearance of two-dimensional nuclei at (111) and (100) faces is found for face-centred cubic lead crystals as a function of supercooling (see Fig. on p.237). It is shown that the most
Card 1/2

S/126/60/010/002/022/028/XX
E201/E491

Directions of Preferential Growth of Metal Crystals From Melt

Closely packed planes in metal lattices possess the maximum relative growth rate in strongly supercooled melts and the minimum relative rate in conditions close to equilibrium. Such closely packed planes govern therefore both the crystallographic orientation of dendrites and the equilibrium form of crystal faces. Theoretical calculations based on these ideas confirm that increase of the purity of a metal (up to, say, 99.9999%) may alter the direction of preferential growth of crystals in agreement with the observations made by Rosenberg and Tiller (Ref.2). This affects the orientation of dendritic axes and the texture in the columnar zone of an ingot. There are 1 figure and 14 references: 2 Soviet, 9 English, 2 German and 1 international.

ASSOCIATION: Institut fiziki metallov AN SSSR
(Institute of Physics of Metals AS USSR)

SUBMITTED: January 14, 1960

Card 2/2

S/126/62/013/004/013/022
E039/E435

AUTHORS: Yesin, V.O., Kralina, A.A.

TITLE: Investigation by X-ray diffraction of the influence of growth velocity and orientation of crystals in twin crystals of aluminium on the degree of their perfection

PERIODICAL: Fizika metallov i metallovedeniye, v.13, no.4, 1962, 577-586

TEXT: Crystals are grown from molten 99.95% pure aluminium in aluminium oxide boats, by the moving furnace technique, at velocities in the range of 0.1 to 3.6 mm/min. A review of earlier work on this subject is given. The relative degree of perfection of adjoining crystals in twin crystals is examined and it is shown that data obtained from different parts of the same sample can differ by more than 10%. At large velocities of growth the crystals tend to be oriented in the direction of growth leading to the appearance of columnar structure. At low velocities of growth the region of possible orientations is wider and at very low velocities single crystals can be grown which are oriented in any direction. If two crystals in the form of a twin
Card 1/2

Investigation by X-ray ...

S/126/62/013/004/013/022
E039/E435

crystal grow under exactly similar conditions but having orientations different from the direction of growth, then the larger the degree of inclination of the boundary between them w.r.t. the angle of growth, and the greater the velocity of growth, the greater will be the degree of imperfection in the crystals. The effect of impurities in the melt is discussed and it is shown that the impurity concentration, which builds up in the later stages of crystal growth, modifies its structure. There are 5 figures and 2 tables.

ASSOCIATION: Institut fiziki metallov AN SSSR
(Institute of Physics of Metals AS USSR)

SUBMITTED: July 28, 1961

Card 2/2

L 18973-63

EWP(q)/EWT(m)/BDS AFFTC/ASD JD

ACCESSION NR: AT3001912

S/2912/62/000/000/0187/0193

AUTHORS: Yesin, V. O., Kralina, A. A.

18
54
54

TITLE: Some peculiarities of the growth of metallic crystals from a fusion.

SOURCE: Kristallizatsiya i fazovyye perekhody* Minsk, Izd-vo AN BSSR, 1962, 187-193.

TOPIC TAGS: crystal, crystallization, crystallography, metallic, lamellar, growth, columnar, impurity, substructure, Sn, honeycomb, banded, transitional.

ABSTRACT: The paper reports experimental findings on two aspects of the growth of metallic crystals from a fusion: (1) The lamellar character of the growth of crystals and various types of impurity substructure. Typical examples of this tangential growth along the most tightly packed planes are shown in photographs. For example, the layerwise growth in Sn occurs along the most densely packed planes of the type (100) or (010). The existence of such a lamellar structure is attributed to the great difference in the probabilities of nucleation and tangential growth of the most densely packed planes in the crystal. An example of the fine structure resulting from a coincidence of the crystallization front with the plane of the lamellar layers is shown in a photograph. The difference of this type of structure in the

Card 1/32

L 18973-63

ACCESSION NR: AT3001912

3

presence and absence of impurities is illustrated. The effect of the presence of quantities of impurities on the formation of a honeycomb substructure, a transitional structure, or a purely banded structure is illustrated and interpreted. (2) The preferable growth directions of metallic crystals and their variation with the degree of purity of the metal. Theoretical calculations and general concepts are set forth on just how the degree of supersaturation and the quantitative presence of impurities can affect the rate of growth of the various faces and, therefore, the various directions of a crystal. It is concluded, from a unitary point of view, that it is possible, for any given internal structure of a crystal and asymmetry of its crystalline lattice, to explain and predict equilibrium forms of growth and the crystallographic orientation of the dendrites. To verify these concepts experimentally, an investigation was made of the effect of the degree of purity of the initial Sn on the direction of its preferential growth. The anticipated changes in the texture in the columnar zone of an ingot with increasing degree of purity were, indeed, found. Whereas in impure Sn there is a sharply pronounced preferential orientation $\langle 110 \rangle$, the crystals appearing in the columnar zone of high-purity Sn have an orientation that lies along one of the sides of the stereographic triangle relative to the axis $\langle 100 \rangle$. This is in accordance with the theoretical postulate that an alteration of the direction of the preferential growth of crystals by changes in purity is feasible. Orig. art. has 4 figures and 1 table.

Card 2/3

YESIN, V.O.

Crystallographic orientation of dendrites and texture in the
columnar zone of a high purity tin ingot. Fiz. met. i metalloved.
16 no.4:509-515 0 '63. (MIRA 16:12)

1. Institut fiziki metallov AN SSSR.

L 17117-63 EWF(q)/EWF(m)/BDS AFFTC/ASD JD

ALUMINUM MONOCRYSTALS

CRYSTAL GROWTH

Author: (see, 1. 1.)

TITLE: Lamellar substructure caused by impurities in aluminum monocrystals grown from melt 27

SOURCE: Fizika metallov i metallovedeniye, v. 15, no. 6, 1963, 919-926

TOPIC TAGS: aluminum monocrystal, lamellar substructure, impurity

ABSTRACT: Mono- and bi-crystals of Al (99.95%) were grown by the B. Chalmer method at the rate of 0.05-2.5 mm/min. The x-ray crystal analysis showed the lamellar substructure caused by the presence of impurities in the melt. The typical pattern of lamellae and the effect of their boundaries on the x-ray diffraction is shown in Fig. 1 (see enclosure). The analysis showed that the direction in which the lamellae are formed depends on the speed and the direction of the crystal growth. The clearest lamellar structure (without noticeable transverse boundaries inside the bands) was observed in the crystals with axis 100 in the plane /100/. In the crystals with a cubic space lattice, this would correspond to the orientation along <111> - <100> and <111> - <110>. When the rate of crystal growth is low, the lamellar boundaries lie in the planes with

Card 1/3

L 17117-63

ACCESSION NR: AP3002852

pass through the direction lines of the crystal growth and that direction $\langle 111 \rangle$ which forms the smallest angle with the front crystallization surface. The lamellar boundaries deviate from the crystal growth direction with the increase in solidification rate. They tend to assume a position parallel to $\langle 100 \rangle$ or to $\langle 110 \rangle$ if the crystal is oriented along $\langle 111 \rangle - \langle 100 \rangle$ or $\langle 111 \rangle - \langle 110 \rangle$ respectively. The author concludes that the formation of lamellar substructures under certain crystallization conditions is characteristic of all metallic crystals containing impurities. Their stability depends on the temperature and on the diffusive mobility of the impurities in the space lattice. Orig. art. has 5 figures.

ASSOCIATION: Institut fiziki metallov AN SSSR (Institute of Physical Metallurgy, Academy of Sciences, SSSR)

SUBMITTED: 01Dec62

DATE ACQ: 23Jul63

ENCL: 01

SUB CODE: ML

NO REF SOV: 002

OTHER: 022

Card 2/3

S/0126/64/017/002/0269/0277

ACCESSION NR: AP4017361

AUTHOR: Yesin, V. O.

TITLE: The effect of minor impurities on the predominant growth direction of metal crystals

SOURCE: Fizika metallov i metallovedeniye, v. 17, no. 2, 1964, 269-277

TOPIC TAGS: bismuth, antimony, tin metal crystal growth, columnar crystal zone, impurity effect, undercooling effect

ABSTRACT: Experiments were performed in order to clarify the effect of small admixtures of Sn on the general growth direction of columnar crystals in Bi (99.9995 wt % pure) and on Sb (99.9991 wt % pure). It was determined that during the solidification of pure Bi the texture $\langle 100 \rangle$ developed in the columnar crystal zone, while during the solidification of Sb the prevailing crystals had the $\langle 110 \rangle$ orientation directed along the course of the heat flux. Small additions of Sn consistently changed the direction of crystal orientation. At the Sn concentration of 0.5 wt % there appeared the usual $\langle 111 \rangle$ texture. This phenomenon was explained

Card 1/2

ACCESSION NR: AP4017361

by the variation in the magnitude of undercooling which was establishing gradually at the surface of the crystallization front during the introduction of the admixtures into the metal melt. The author concludes that under such conditions the prevailing crystallographic orientation of the growing crystals and the order of the orientation-changes (with the increase in the impurity concentration) should be equivalent to those in a pure metal melt during the decrease in its undercooling. The explanation offered was sustained by the experimental results. Orig. art. has: 1 table and 3 figures.

ASSOCIATION: Institut fiziki metallov AN SSSR (Institute of Physics of Metallurgy AN SSSR)

SUBMITTED: 25Apr63

DATE ACQ: 18Mar64

ENCL: 00

SUB CODE: MM

NO REF SOV: 005

OTHER: 013

Card 2/2

ACC NR: AP6032620

(N)

SOURCE CODE: UR/0126/66/022/003/0415/0419

AUTHOR: Yesin, V. O.; Levit, V. I.; Romanov, Ye. P.; Smirnov, L. V.

ORG: Institute of the Physics of Metals, AN SSSR (Institut fiziki metallov AN SSSR)

TITLE: Orientation, purity and perfection of molybdenum single crystals grown by electron-beam zone melting

SOURCE: Fizika metallov i metallovedeniye, v. 22, no. 3, 1966, 415-419

TOPIC TAGS: single crystal, molybdenum single crystal, single crystal growing, electron beam ~~zone~~ melting, single crystal orientation, single crystal purity, single crystal structure, *MOLYBDENUM, METAL ZONE MELTING*

ABSTRACT: Molybdenum single crystals, 3 mm in diameter and 60—120 mm long, were grown by the zone-melting method in a vacuum of 10^{-6} — 10^{-7} mm Hg with an electron-beam heat source. The initial material, polycrystalline commercial-grade (99.8%-pure) molybdenum wire had a ratio of resistivities at 285 and 4.2K equal to 20. The orientations of the single crystals was found to depend on the rate of growing or on the rate of molten zone travel. No clear relationship was established between the single crystal perfection (the maximum disorientation angle between the elements of macromosaic substructure, $\max\theta'$) and the melting-zone speed at which the crystals were grown. A clear relationship, however, was found between the crystal perfection ($\max.\theta'$) and its purity ($\rho_{285K}/\rho_{4.2K}$). The relationship can be empirically expressed

Card 1/2

UDC: 669.28:548.5

ACC NR: AP6032620

as: the more perfect the crystal, the less pure it is. Increasing the zone refining effectiveness increased the angle of general disorientation of the fragments of macromosaic substructure of the crystals. Very pure molybdenum single crystals were obtained after three passes at medium speeds (1.2—1.8 mm/min). The maximum value of the $\rho_{285K}/\rho_{4.2K}$ ratio was 5000. The respective values for 2 passes and 1 pass were 2200 and 980. V. Y. Startsev and N. V. Volkensteyn are thanked for the electric resistivity measurements. Orig. art. has: 3 figures.

SUB CODE: 11/ SUBM DATE: 10Sep65/ ORIG REF: 003/ OTH REF: 004

Card 2/2

YESIN, V. V. (ENGR)

YESIN, V. V. (ENGR) -- "Investigation of the Process of Atomization of Solid Fuel in Connection With the Problem of Spontaneous Combustion of the Latter in Stationary and Auto Tractor Internal-Combustions Engines." Sub 18 Jun 52, Moscow Inst of Mech and Electr of Agr imeni V. M. Molotov (Dissertation for the Degree of Candidate in the Technical Sciences)

SO: VECHERNAYA MOSKVA, JANUARY-DECEMBER 1952

YESIN, V.V.; KANTOROVICH, B.V.; SHIGAYEV, N.N.

Effect of volatile substances on the combustion rate of pulverized fuels at various pressures [with summary in English]. Inzh.-fiz. zhur. 1 no.8:52-58 Ag '58. (MIRA 11:8)

1. Institut mekhanizatsii i elektrifikatsii sel'skogo khozyaystva
Moskva.

(Combustion)

YESIN, V. V., kand.tekhn.nauk, SHIGAYEV, N. N., inzh.

Effect of pressure on the rate of combustion of solid fuels. . .
Trudy MIMESKH 8:16-29 '59. (MIRA 13:9)
(Fuel)

YESIN, Y.V., kand.tekhn.nauk; SHIGAYEV, N.M. inzh.

Theoretical studies of the rate of combustion of pulverized fuels
in a bomb-type installation. Trudy MIMESKH 8:30-45 '59.
(MIRA 13:9)

(Fuel)

S/194/62/000/001/025/066
D201/D305

AUTHORS: Yesin, Yu. F. and Yurevich, Ye. I.

TITLE: Investigating the dynamics of turbine absolute angle control at small deviations from the steady state

PERIODICAL: Referativnyy zhurnal, Avtomatika i radioelektronika, no. 1, 1962, abstract 1-2-99 v (Nauchno-tekhn. informbyul. Leningr. politekhn. in-t, 1960, no: 12, 72-78)

TEXT: The problems of tuning the regulator and the effect of separate parameters on the control quality are considered for the dynamic controlled operation of a turbine. The results of investigations into the control dynamics of a turbine generator aggregate are given. The value of absolute angle was used in investigations, together with the method of mathematical simulation. The following automatic control systems are analyzed: Primary and secondary astatic control of a turbo-aggregate and the angle control of a hydro-aggregate. It is shown that basic results obtained from analysis of the angle automatic control system of the turbo-aggregate are

Card 1/2

Investigating the dynamics ...

S/194/62/000/001/025/066
D201/D305

applicable to the hydro-aggregate. 8 figures. 1 reference. / Ab-
stracter's note: Complete translation. ✓

Card 2/2

SOV/137-58-7-14223

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 7, p 37 (USSR)

AUTHOR: Yesin, Yu.O., Gel'd, P.V.

TITLE: Reduction of Chromium Oxide With Carbon (Vosstanovleniye okisi khroma uglerodom)

PERIODICAL: Tr. Ural'skogo politekhn. in-ta 1957, Nr 72, pp 179-191

ABSTRACT: The applicability of the two-stage theory (reduction with CO gas, regeneration of CO with carbon) to high-temperature processes of direct reduction was investigated. The process of direct reduction of Cr_2O_3 with carbon at a molecular proportion $Cr_2O_3:C = 1:4.5$ was studied by means of the observation of the loss of weight of a specimen with a simultaneous inspection of the composition of the products formed by the reaction. The gaseous phase consisted of practically pure CO. The process of reduction was studied in vacuo as well as with an accumulation of CO in the system. A sharply defined incubation period was discovered, the duration of which increases with a lowering of the temperature, also a period of increase in rate which points to the autocatalytic character of the process of

Card 1/3

SOV/137-58-7-14223

Reduction of Chromium Oxide With Carbon

direct reduction of Cr_2O_3 . At low temperatures an increase in pressure retards somewhat the interaction and at elevated temperatures it noticeably accelerates the process. It is shown that the substitution of metallurgical coke for graphite leads to a sharp decrease in the rate of reduction. Influence of salts of alkali metals was studied. The presence of K_2CO_3 and Na_2CO_3 increases considerably the rate of reduction, the action of either carbonate being about the same. The introduction of an activator in the form of a dry salt and the impregnation of the graphite with an aqueous solution show a similar effect. This leads to the conclusion that at a high temperature dry salts impregnate the C with their vapors and activate it. The activating effect of the salts on the rate of gasification of C with carbon dioxide is corroborated by a direct experiment at 1000°C . According to the conclusions of the authors, in the primary period of reduction of Cr_2O_3 by C the limiting stage of the process is the act of crystallochemical transformation of the oxide into the metal. During that period the energy of activation attains 140,000 cal/mol. During a definite stage of the reduction, when the formation of a reaction zone is completed, the kinetic complications, in relation to the regrouping of the lattice, decrease, and to a considerable extent the speed of the process begins to be determined by the speed of gasification

Card 2/3

SOV/137-58-7-14223

Reduction of Chromium Oxide With Carbon

of the carbon, whereupon certain new kinetic mechanisms arise (relationship of the rate of reduction to the pressure of the gaseous phase, a decrease of the energy of activation of almost 50%, and others).

A.V.

1. Chromium oxides--Reduction
2. Carbon--Properties
3. Chromium oxides--Phase studies

Card 3/3

SOV/137-58-7-14224

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 7, p 38 (USSR)

AUTHORS: Yesin, Yu.O., Gel'd, P.V.

TITLE: Influence of Briquetting and the Pressure of the Gaseous Phase on the Rate of Direct Reduction of Zinc Oxide (Vliyaniye briketirovaniya i davleniya gazovoy fazy na skorost' pryamogo vosstanovleniya okisi tsinka)

PERIODICAL: Tr. Ural'skogo politekhn. in-ta, 1957, Nr 72, pp 192-195

ABSTRACT: By experimental reduction of ZnO with solid C in a vacuum it was demonstrated that the rate of reduction has no relation to the compression pressure in the range of 0 to 600 kg/cm². This emphasizes the important role of the gaseous phase and the two-stage character of the process of direct reduction. Upon changing the pressure of the gaseous phase it was discovered that the rate of reduction of ZnO in a partial vacuum is somewhat higher than in a high vacuum. Upon accumulation of re-action products a considerable retardation of the process is observed. Such an extreme dependence of the rate of the process upon pressure is explained by an acceleration of the reaction with an increase of p_{CO} (CO pressure) and a retardation with

Card 1/2

SOV/137-58-7-14224

Influence of Briquetting and the Pressure of the Gaseous Phase (cont.)

an accumulation of Zn vapors. The complex role of the gaseous phase during direct reduction is emphasized.

A.V.

1. Zinc oxides--Reduction
2. Zinc oxides--Phase studies
3. Carbon--Applications

Card 2/2

YESIN, Yu.O., Cand Tech Sci -- (diss) "Peculiarities
of the ^{direct} straight reduction of chromium and zinc oxides."

Sverdlovsk, 1958, 18 pp (Min of Higher Education USSR.

Ural Polytechnic Inst im S.M. Kirov) 100 copies (KL, 28-58, 106)

- 35 -

YESIN, Yu., O.; GEL'D, P.V.

Reduction of zinc oxide by carbon. Trudy Inst. khim. UFAN SSSR
no.2:63-79 '58. (MIRA 12:12)
(Zinc) (Carbon)

YESIN, Yu.O.; GEL'D, P.V.

Reduction of zinc oxide by carbon. Zhur. prikl. khim. 31
no.7:986-995 J1 '58. (MIRA 11:9)
(Zinc oxide) (Carbon) (Reduction, Chemical)

YESIN, Yu.O.; GEL'D, P.V.

Direct reduction of chromium oxide. Zhur. prikl. khim. 31 no.9:
1285-1293 S '58. (MIRA 11:10)
(Chromium oxides) (Reduction, Chemical)

YASIN, Yu.O.

Calculating the speed of various processes. Trudy Ural. politekh.
inst. no.92:158-167 '59. (MIRA 13:12)
(Metallurgy)

1980 100 100 100
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1994 100 100 100
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2000 100 100 100

PLOTNIKOVA, L.M.; YESINA, A.I.

Spatial distribution of seismic centers in Central Asia during
1957-1959. Izv. AN Uz. SSR. Ser. fiz.-mat. nauk 6 no.3:18-24
'62. (MIRA 15:8)

1. Institut matematiki imeni V.I.Romanovskogo AN UzSSR.
(Asia, Central—Earthquakes)

SEYDUZOVA, S.S.; GROSS, I.Ch.; YESINA, A.I.; TROSTYANSKIY, G.D.

Regularities in the attenuation with distance of the density of the energy flow of seismic vibrations at periods of 0.3 to 0.9 seconds in Central Asia. Trudy Inst. mat. AN Uz. SSR no.25:133-146 '62.
(MIRA 16:8)

(Soviet Central Asia--Seismology)

ABRAMOV, V.I., inzh.; YESINA, T.M., inzh.

Conversion of V-60-S equipment to operation with d.c. power supply.
Vent. svlazi 25 no.3:5-7 Mr '65. (MIRA 18:5)

1. Glavnoye upravleniye mezhdugorodnoy telegrafnoy i telefonnoy
svyazi Ministerstva svyazi SSSR.

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B142/B101

AUTHORS: Plotnikova, L. M., Yesina, A. I.
TITLE: Spatial distribution of earthquake centers in Soviet Central Asia between 1957 and 1959
PERIODICAL: Akademiya nauk Uzbekskoy SSR. Izvestiya. Seriya fiziko-matematicheskikh nauk, no. 3, 1962, 18 - 24

TEXT: Data were collected at 24 fixed stations including 14 general equipped with apparatus on the D. P. Kirnos system, 6 regional with apparatus on the D. A. Kharin system, three with different apparatus and 1 with teleseismic apparatus on the B. B. Golitsyn system; also mobile stations belonging to the Garm group in the comprehensive seismological expedition of the Institut fiziki Zemli AN SSSR (Institute of Physics of the Earth AS USSR) and to the Dushanbe and Vakhsh groups of the Institut seysmologii i seysmicheskogo stroitel'stva Tadjhikskoy Akademii Nauk (Institute of Seismology and Seismologic Structure of the Academy of Sciences Tadjhikskaya SSR). In 1958/59, 8 mobile stations of the AN SSSR (AS USSR), AN KirgSSR (AS KirgSSR), AN UzSSR (AS UzSSR) were operating in

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Spatial distribution of earthquake...

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the Fergana valley. The epicenters were calculated at the expedition stations and those which had an error of $\delta \leq 5$ km were not checked against the data of the fixed stations. For quakes in the crust the epicenters were determined by the 'intersection and hyperbola' methods; for quakes located more deeply they were determined by Isikava's method. The centers were classified according to the quantity M (B. Gutenberg, C.F. Richter, Earthquake magnitude, intensity, energy and acceleration, Bull. seism. Soc. At, No. 3, 1942). Deeply situated quakes which are recorded at a distance ≥ 1000 km from the epicenter, are called intensive. The quakes published are between $M = 3$ and $M \leq 6 \frac{1}{4}$. The centers of all strong quakes are in zones of high epicentral density or on their boundaries. The seismic activity between 1957 and 1959 was similar to that between 1911 and 1956. The strongest seismic activity occurred in the Pamir-Hindukush region, in North Tien Shan, in the Obi-Garm - Garm-Dzhirgital' region, along the Alay and Kokshaaltau ranges, Terekoy-Alatau, Kirgizskiy, Chatkal'skiy, Talasskiy, and Chu-Iliyskiy ranges, and in the eastern Fergana valley. The Naryn depression, the north-western part of the Fergana valley, parts between the Kirgizskiy and Talasskiy ranges and the Muldatau chain, the Issyk-Kul'-depression, a region between 70.5' and

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