

L 02452-07

ACC NR: AP6008270

2

TABLE 1
 Stability of polyester resin PN-1 after exposure to various oxidants
 for 100 days

Oxidant	Concentration (%)	Indices of stability	
		Corrosion g/m ² -hour	Bending strength (kg/cm ²)
Sulfuric acid	1	-0.97	351
	15	-1.14	373
	33	-1.45	497
	60	Destroyed	Destroyed
	80	"	"
	96	"	"
Nitric acid	1	-0.99	474
	15	+0.93	240
	30	+1.323	204
	56	Destroyed	Destroyed
Nitric acid vapors	1.55 mg/l	"	"
Hydrogen peroxide:			
	liquid phase	10	-1.37
gas phase	10	-0.587	265

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Potassium hypochlorite:

liquid phase	10	Destroyed	212
gas phase	10	+0.222	325

Note: The symbol (-) means loss of weight, (+) means gain in weight of 1 x 1 x 3 cm specimen.

SUB CODE: 07,11/

SUBM DATE: 21Nov64/

ORIG REF: 002/

OTH REF: 003.

Card 4/4

gd

L 3274-66 EWT(d)/EWT(m)/EWP(v)/T/EWP(t)/EWP(k)/EWP(h)/EWP(b)/EWP(l)/EWA(c) JD/HM

ACC NR: AP5025609

UR/0135/65/000/010/0012/0014
621.791.75:621.078

73
B

AUTHOR: Borisov, B. K. (Engineer); Volchenko, V. N. (Candidate of technical sciences)

TITLE: Automatic control of argon-arc welding based on standard contactless modules

SOURCE: Svarochnoye proizvodstvo, no. 10, 1965, 12-14

TOPIC TAGS: argon, arc welding, automatic welding, control system, logic element, welding equipment

ABSTRACT: The authors recommend standard modular elements of welding control systems based on contactless elements -- logic tubes with a TKh8G type cathode. Such standard elements or modules which find application in many welding systems are: memory cells, time relays, arc indicators, power amplifiers, etc. By way of an example, a programmed-control system for single-pass welding is discussed. The sequence of programmed operations in this case is: the starting signal is supplied to the memory cell which, via a power amplifier, triggers the valve admitting argon to the welding zone and, 10 sec later, ignites the arc and triggers the arc indicator. The modules are of a block-shaped design, convenient to assemble and disassemble in accordance with space requirements. These standard modules may be combined into a single so-called universal module which at present is used in experimental welding equipment. The use of contactless elements and the modular principle of assembling

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ACC NR: AP5025609

automatic welding systems displays the following advantages: universality, interchangeability, operating reliability and simplicity, low weight, and compactness, and the possibility of further miniaturization in the future. Orig. art. has: 7 figures.

ASSOCIATION: none

SUBMITTED: 00

ENCL: 00

SUB CODE: IE EC

NO REF SOV: 003

OTHER: 000

Card

2/2

L 10021-67 EWT(d)/EWP(v)/EWP(k)/EWP(h)/EWP(1) IJP(c) BB/GG
ACC NR: AP6023612 SOURCE CODE: UR/0105/66/000/007/0052/0055

AUTHOR: Borisov, B. K. (Moscow); Popov, P. I. (Moscow)

49

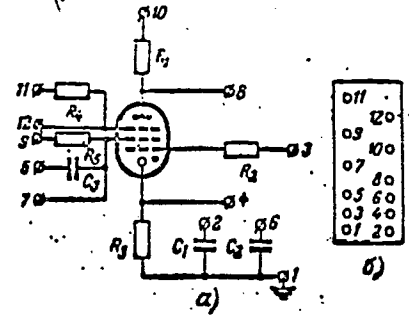
ORG: none

TITLE: Universal module for constructing logic units in automatic control systems

SOURCE: Elektrichestvo, no. 7, 1966, 52-55

TOPIC TAGS: logic design, logic element, automatic control system

ABSTRACT: To enhance the reliability of automatic control systems, a universal module based on a Soviet-made TCh8G cold-cathode tube is suggested. By making suitable connections to such a module (see figure) two dozen logic functions are obtainable. All components are embedded in a plastic which can operate in the -60+90C interval; the tube glow is



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UDC: 62-523.8

L 10021-67

ACC NR: AP6023612

visible through the plastic. The use of the module in the AND-gate, OR-gate, memory, etc., is illustrated. Module data: anode voltage, 300 v; anode current, 1 ma; input signal, 120 v; output signal, 160 v; control-pulse duration, 60 μ sec; minimum input, 40 μ w; minimum output, 0.16 w; weight, 27 g. Orig. art. has: 10 figures and 6 formulas.

SUB CODE: 09 / SUBM DATE: 29Jun65 / ORIG REF: 003

Card 2/2 egk

BORISOV, B.L., dots., kand. tekhn. nauk; LYUBOVICH, Yu.O., dots.,
red,

[Socialist labor contracts] Sotsialisticheskii trudovoi dogovor;
posobie po kursu "Sovetskoe administrativnoe grazhdanskoe i tru-
dovoe pravo." Moskva, Zaochnyi in-t sovetskoi trgovli, 1959.
37 p. (MIRA 16:4)

1. Zaveduyushchiy kafedroy otraslevykh ekonomik i prava za-
ochnogo instituta Sovetskoy trgovli (for Lyubovich).
(Labor contract)

BORISOV, BORIS LEONIDOVICH

M/6

108

.B7

MESTNIYE ORGANY GOSUDARSTVENNOY VLASTI YEVROPEYSKIKH
STRAN NARODNOY DEMOKRATII LOCAL ORGANS OF THE STATE AUTHORITY OF
EUROPEAN COUNTRIES OF THE PEOPLE'S DEMOCRACIES MOSKVA,
GOSFOLIZDAT, 1955.

131 P.

BIBLIOGRAPHIC FOOTNOTES.

BORISOV, B. M.

✓ 10188* Possibilities of Concentration of Kara-Tau Phosphate
Rocks Otherwise Difficult to Concentrate. Predposylki k oboga-
shchenniu trudnoobogotimyykh fosforitnykh rud mestorozh-
deniya Kara-Tau. (Russian.) B. M. Borisov. *Khimicheskaya
Promyshlennost'*, 1956, no. 1, Jan.-Feb. 1956, p. 13-19.
Discusses the possibility of using sodium oleate for flotation of
phosphate. Method of determining the selective power and
consumption of the reagent from a variation of the electrokinetic
potentials. Tables, graphs. 7 ref.

metal

BORISOV, B. P.

BORISOV, B. P. -- "Investigation of the Working Process of a Diesel Compressor with a Free-Moving Piston (SPDK)." Min Higher Education USSR. Moscow Order of Lenin Aviation Inst imeni Sergo Ordzhonikidze. Moscow, 1956. (Dissertation for the Degree of Candidate in Technical Sciences)

SOURCE Knizhnaya Letopis', No 6 1956

Book 800, 15 P

KOSHKIN, Valentin Konstantinovich, professor; LEVIN, Boris Ruvimovich;
KUTYRIN, Igor' Nikolayevich; BORISOV, Boris Petrovich; PORTNOV,
D.A., doktor tekhnicheskikh nauk, rezensent; LOSHPA, A.I.,
kandidat tekhnicheskikh nauk, redaktor; UVAROVA, A.F., tekhnicheskiy redaktor

[Free-piston engines in heat power plants] Dvigateli so svobodno dvizhushchimisia porshniami v teplosilovykh ustanovkakh. Pod red. V.K.Koshkina. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. lit-ry, 1957. 227 p. (MLRA 10:6)
(Gas turbines) (Gas and oil engines) (Pistons)

OL'YAK, V.D., inzh.; BORISOV, B.P., kand.tekhn.nauk; BRYLEV, A.V., inzh.

Electric induction brakes. Vest.mash. 41 no.8:42-44 Ag '61.
(MIRA 14:8)

(Gas and oil engines--Brakes)

BORISOV, B.P., kand. tekhn. nauk

Methods for indicating and taking oscillograms of free-piston engines. Izv. vys. ucheb. zav.; mashinostr. no. 9:99-105 '61. (MIRA 14:12)

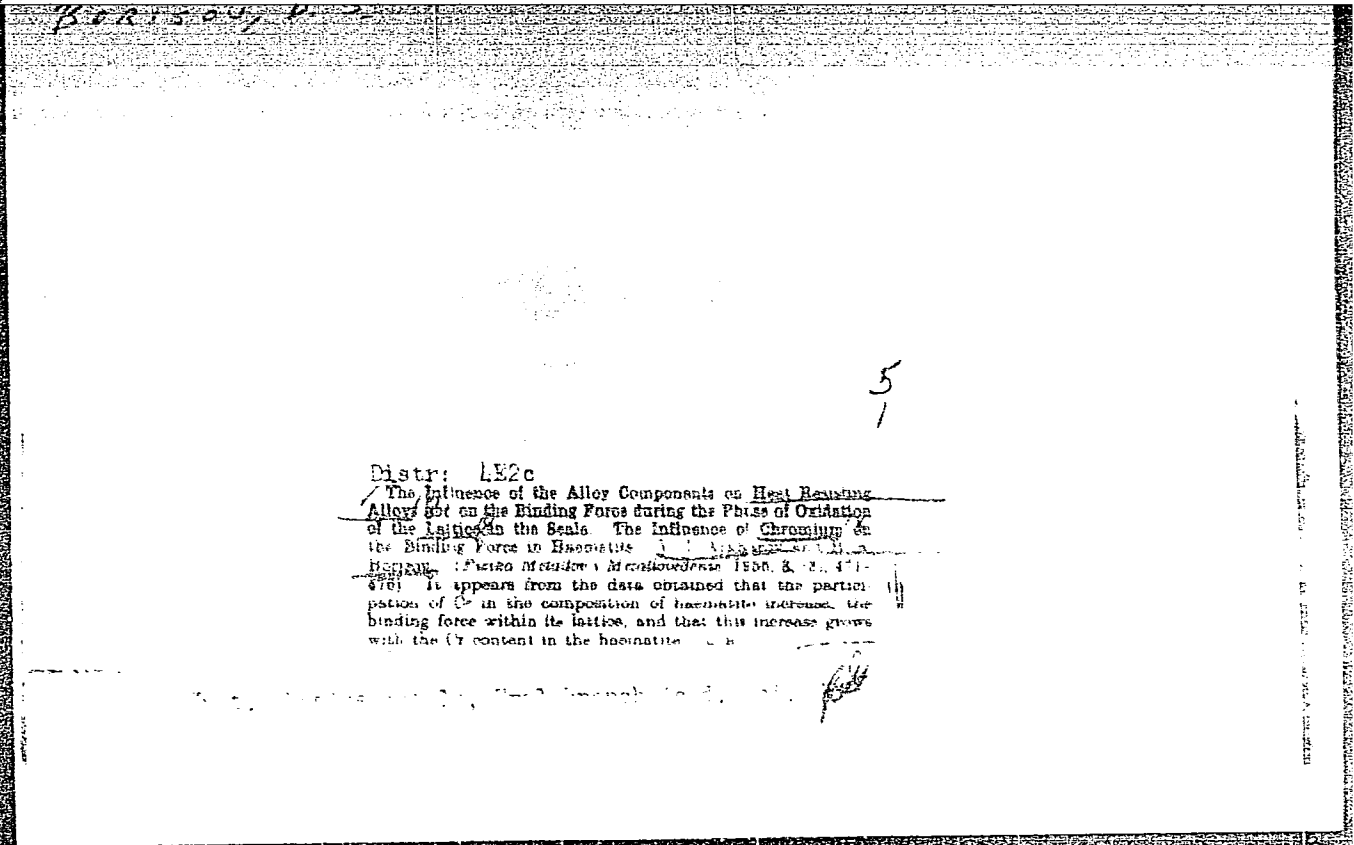
1. Zaporozhskiy mashinstroitel'nyy institut.
(Diesel engines---Testing)

БОРИСОВ Б С

ARKHAROV, V.I.; BORISOV, B.S.

Hematite structure in the external layer of iron scale. Fiz.met.
i metallove. 3 no.3:460-467 '56. (MLRA 10:3)

1. Institut fiziki metallov Ural'skogo filiala AN SSSR.
(Iron oxides--Metallography) (Diffusion)



SOV/137-58-7-15374

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 7, p 206 (USSR)

AUTHORS: Arkharov, V.I., Bogoslovskiy, V.N., Borisov, B.S.,
Kichigina, Z.P.

TITLE: Details of Scale Structure and Their Significance in the Process of High-temperature Oxidation of Iron and Steel in Relation to the Problem of Heat Stability (Detali struktury okaliny i ikh znacheniy v protsesse vysokotemperaturnogo okisleniya zheleza i stali v svyazi s problemoy zharostoykosti)

PERIODICAL: V sb.: Issled. po zharoprochn. splavam. Vol 2. Moscow, AN SSSR, 1957, pp 98-119

ABSTRACT: Review of works on the problems of high-temperature oxidation of Fe and steel performed by the diffusion laboratory of the Institute of the Physics of Metals, Ural branch, Academy of Sciences, USSR, jointly with the chair of solid-body physics of the Ural State University. The authors consider the problem of increasing the cohesive forces in the lattices of the oxide phases and the determination of the relationship between the concentration of alloying elements in the metallic phase and in the oxides to be of primary importance in the development of heat stability. Bibliography: 23 references. L.A.

Card 1/1

1. Metals--Oxidation
2. Metals--Temperature factors
3. Metals--Scale

137-58-6-13316

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 6, p 308 (USSR)

AUTHORS: Arkharov, V. I., Borisov, B. S., Mardeshev, S. V.

TITLE: Diffusional Self-hardening as a Factor of High-temperature Deformation (Diffuzionnyy samonaklep kak faktor vysokotemperaturnoy deformatsii)

PERIODICAL: V sb.: Issled. po zharoprochn. splavam. Vol 2, Moscow, AN SSSR, 1957, pp 120-124

ABSTRACT: The phenomenon of diffusional self-hardening of metal was studied under conditions of high-temperature heating. Experiments were performed on cylindrical specimens (S) of polycrystalline, non-texturized Cu freely suspended in the center of an evacuated and sealed ampoule on the bottom of which a certain amount of fine shavings of α brass had been placed. After heating the container to a temperature of 850°C for several hours, the S was withdrawn and a "texturogram" of its surface was taken by means of standard methods. The result was a sharply defined texture (T) characterized by the position of the (110) plane parallel to the external surface.

Card 1/2 The appearance of T in the surface layer of the S is

137-58-6-13316

Diffusional Self-hardening as a Factor (cont.)

connected with the process of recrystallization (R) which clearly indicates that the surface layer of the S has become hardened, inasmuch as in their original condition, prior to the diffusion experiment, the S's were not hardened. The appearance of hardening and the R resulting from it are attributed to the diffusion of Zn from the gaseous medium into the surface layer of Cu. It is pointed out that directional character of the resulting stresses is of great importance in this phenomenon (in a plane parallel to the external surface of the S); this is attributable to the radial direction of the diffusion flow which, in turn, determines the alignment of the resulting T of R. The formation of the T takes place within a relatively narrow range of temperatures. It is assumed that a temperature "threshold" of R exists at low temperatures below which no R occurs; also, at exceedingly high temperatures, R does not take place. Analogous experiments dealing with the diffusion of Zn into single crystals of Cu were also performed. It is established that, as a result of the diffusion of Zn from the α brass, the single crystals acquire polygonal shape, as is apparent from the separation of spots on Laue diffraction patterns. Experimental data obtained corroborate the theory on the function of diffusion in producing lattice distortions. Diffusional self-hardening reaches macroscopic proportion only under special conditions (under high-temperature plastic deformations); at low-temperature plastic deformations its role is almost negligible. 1. Metals--Deformation 2. Metals--Temperature factors
Card 2/2 3. Metals--Test results

BORISOV, T.S.
ARKHAROV, V.I.; BORISOV, B.S.

Texture of iron scale. Part 9. Electronographic investigation of textures in the hematite layer at varying stages of iron oxidation in the air. Fiz. met. i metalloved. 4 no.1:76-83 '57.
(MLRA 10:6)

1. Institut fiziki metallov Ural'skogo filiala Akademii nauk SSSR.
(Iron oxides--Metallography)
(Electron diffraction examination)

BORISOV, B.S. 20-2-16/60

AUTHORS: Arkharov, V. I. , Borisov, B. S.

TITLE: On the Problem of the Oxidation Mechanism of Magnetite
(K voprosu o mekhanizme okisleniya magnetita)

PERIODICAL: Doklady Akademii Nauk SSSR, 1957, Vol. 114, N_T 2, pp. 293-296
(USSR)

ABSTRACT: At first the present state of the problems is described and reference is made to earlier papers dealing with the same subject. The facts mentioned in this connection show that the crystallochemical mechanism of the reaction $M \rightleftharpoons G$ requires further detailed definition. For this purpose the authors made experiments on the oxidation of natural magnetite-monocrystals on the air at various temperatures and a structural analysis of the oxidation-products. The radiographic and the electronographic methods were employed in the analysis. The natural (octahedral) surface of the magnetite-crystal in the initial state and the surface layer of the magnetite crystal after its oxidation at temperatures of more than 800°C were radiographically investigated by the authors. The results of the superficial oxidation of the natural sur-

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20-2-16/60

On the Problem of the Oxidation Mechanism of Magnetite

faces of the magnetite crystal at 600°C and 800°C were electronographically investigated. At all temperatures investigated here a pseudocrystalline hematite-layer, whose diffraction-spots correspond to the α''' -variety, forms on the surface of the magnetite-octahedron in the initial stage of oxidation. At 600 and 800°C many additional "forbidden" diffraction-spots are also obtained in the electronographic image of the pseudomonocrystalline α''' - Γ -layer, which indicates certain deviations of the hematite-lattice from the norm. In the course of further oxidation modifications in the structure of the superficial hematite-layer occur. At 800°C and more these modifications consist of a gradual decrease in the degree of perfection of the corresponding orientation: The diffraction-spots turn into texture-maxima. Some X-ray photographs and electronographs are given. At 600°C the earliest stage of oxidation is completely similar to the early stages at higher temperatures. But in the course of further oxidation at 600°C new phenomena exist which are absent at higher temperatures. The authors suggest the following explanation for the experimental data found here: When the magnetite-crystal is heated on to air the oxygen is absorbed on the sur-

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20-2-16/60

On the Problem of the Oxidation Mechanism of Magnetite

face of the outer octahedral surfaces. Then the oxygen-atoms diffuse into the lattice and cause its reconstruction. There are 3 figures, and 13 references, 8 of which are Soviet.

ASSOCIATION: Institute for the Physics of Metals of the Ural Branch AS
USSR
(Institut fiziki metallov Ural'skogo filiala Akademii nauk
SSSR)

PRESENTED: July 9, 1956, by G. V. Kurdyumov, Academician

SUBMITTED: July 5, 1956

AVAILABLE: Library of Congress

Card 3/3

1

BORISOV, B.S., Cand Phys Math Sci -- (diss) "Study of ~~the~~
~~details~~ of the mechanism of high temperature oxidation of
iron and the effect of ^{alloy} components ^{upon} its resistance to
heat." Sverdlovsk, 1958, 8 pp (Min of Higher Education
USSR. Ural State Univ im A.M. Gor'kiy) 120 copies
(KL, 27-58, 101-2)

BORISOV, B.S.

SOV/3355

PHASE I BOOK EXPLOITATION

18(7) Akademiya nauk SSSR. Institut metallurgii. Mauchnyy sovet po probleme zharoprotivnykh splavov. Problema zharoprotivnykh splavov. Izdaniya po zharoprotivnykh splavam, t. IV (Studies on Heat-Resistant Alloys, vol. 4). Moscow, Izd-vo AN SSSR, 1959. 400 p. Issledovaniya po zharoprotivnykh splavam. Errata slip inserted. 2,200 copies printed.

Zh. of Publishing House: V. A. Klimov; Tech. Ed.: A. P. Guseva; Editorial Board: I. P. Bardin, Academician; G. V. Kurdyumov, Academician; M. V. Agayev; Corresponding Member, USSR Academy of Sciences; I. A. Odintsov; I. M. Pavlov, and I. P. Zudin, Candidate of Technical Sciences.

PURPOSE: This book is intended for metallurgists concerned with the structural metallurgy of alloys.

COVERAGE: This is a collection of specialized studies of various problems in the structural metallurgy of heat-resistant alloys. Some are covered with theoretical principles, with descriptions of new equipment and methods, others with properties of specific materials. Various phenomena occurring under specified conditions are studied and reported on. For details, see Table of Contents. The articles are accompanied by a number of references, both Soviet and non-Soviet.

Investigation of Diffusion-Creep in Ceramics	301
Some Problems in the Theory of Sintering	311
Properties of Tungsten Carbides and of Ceramics Based on Them	317
Radiant Emissivity of Metals	323
High Temperature Oxidation of Tungsten, Molybdenum, Tantalum and Rhenium in the Recrystallized and Work-hardened States	329
Effect of Alloying Elements on the Oxide-Phase Structure in Scale. Effect of Nickel and the Combined Effect of Chromium and Nickel on the Bond Strength in Hematite	340

Card 10/12

AUTHORS: Zyryanov, P.S., Borisov, B.S. and Taluts, G.G. SOV/126-7-1-24/28

TITLE: Singularities of Sound Propagation in a Metal (Osobennosti rasprostraneniya zvuka v metalle)

PERIODICAL: Fizika Metallov i Metallovedeniye, 1959, Vol.7, Nr.1, pp 153-154 (USSR)

ABSTRACT: For describing the propagation of sound waves of sufficiently high energy-density (e.g. ultrasonic waves) the lattice binding energies in a metal may be ignored and the metal treated as an ionic plasma. The following relation will then hold:

$$\Phi = \frac{M}{\sqrt{2e}} \left[1 + \frac{\omega^2}{\omega_0^2} \right]^{-1} \frac{\omega^2}{q} X,$$

Here X is the amplitude of the ultrasonic wave and Φ the associated electric field potential; M , e are respectively the ionic mass and charge; ω , q are respectively the ultrasonic angular frequency and wave-number; finally Card 1/4 ω_0 is a characteristic angular frequency of the plasma,

Singularities of Sound Propagation in a Metal

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given by:

$$\omega_0^2 = \frac{4\pi n e^2}{M}$$

where n is the ionic density. Furthermore the acoustic energy flux S in the z -direction may be written as:

$$S = c\varepsilon$$

where c is the sound velocity and

$$\varepsilon = \frac{Mn\omega^2}{2} |X|^2 \exp(-2\alpha z)$$

with α denoting the sound absorption coefficient. A relation between the acoustic and electric energy fluxes Card 2/4 which follows from the above is:

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Singularities of Sound Propagation in a Metal

$$-\frac{\partial \epsilon}{\partial t} = -\frac{\sigma M}{M} |\nabla \phi|^2$$

where t is time and σ is the electrical conductivity. Now the left-hand side of this last equation must clearly equal $\text{div } S$, and from this follows immediately the relation between α and σ :

$$\alpha = \frac{\omega^2 M}{e^2 n e} \cdot \sigma$$

This shows that "anomalous" acoustic propagation (acoustic absorption bands) will occur under conditions favouring high electrical conductivity: energy removed from the sound waves appears as electric current. Such a current will produce heating of the metal and the magnitude of this effect is discussed for some typical cases. There are Card 3/4 3 references, of which 2 are Soviet and 1 English.

SOV/126-7-1-24/28

Singularities of Sound Propagation in a Metal

ASSOCIATION: Ural'skiy politekhnicheskiy institut imeni S.M. Kirova
(Ural Polytechnical Institute imeni S.M. Kirov); Institut
fiziki metallov AN SSSR (Metal Physics Institute, Ac. Sc.,
USSR)

Card 4/4

ARKHAROV, V.I.; BORISOV, B.S.

Effect of alloying elements on the heat resistance of alloys
and binding forces in oxide phase lattices of scale. Effect of
nickel and the combined effect of chromium and nickel on binding
forces in hematite. Issl.po zharopr.splav. 4:340-342 '59.
(MIRA 13:5)

(Heat-resistant alloys--Corrosion)

(Hematite--Metallography)

67772

18.7510
AUTHORS: Arkharov, V.I., Borisov, B.S., Vangengeym, S.D., and Taluts, G.G. SOV/126-8-5-26/29

TITLE: On the Question of the Mechanism of Intercrystalline Internal Adsorption in Dilute Solid Solutions

PERIODICAL: Fizika metallov i metallovedeniye, Vol 8, 1959, Nr 5, pp 792-794 (USSR)

ABSTRACT: The interaction between the electron shells of atoms in a dilute solid solution can strongly affect the behaviour of impurity atoms in this solid solution. This applies particularly to intercrystalline internal adsorption. By taking into consideration the electron interaction it is possible to describe the atomic mechanism of internal adsorption and associate it with quantitative data available in this field. If there are defects or structural non-uniformities in the lattice the impurity atoms react with them. This is a long-range order interaction and hence screening must become evident, i.e. the impurity atoms must behave as if they possessed a "screened" atomic radius. As any structural non-uniformity (among them grain boundaries) can be considered to be a dislocation system, for an

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On the Question of the Mechanism of Intercrystalline Internal
Adsorption in Dilute Solid Solutions

approximate description of the interaction between impurity atoms in a solid solution and lattice distortions, it is possible to use Webb's calculation (Ref 11). In this way one can evaluate the number of atoms, N_0 , diffusing through the grain body to the dislocation system modelling the intercrystalline boundary, i.e. the number of atoms experiencing intercrystalline internal adsorption. Such a calculation was carried out by the authors for the solid solutions Ag-Tl, Ag-Zn, Ag-Pb, Cu-Mg and Cu-Sn. The concentrations of horophilic elements in these alloys were considerably lower than their volume solubility. The results of the calculations are reported in the table on p 793. Although the calculated and experimental results agree quite well, a discrepancy can be observed which in a few cases exceeds the absolute errors in lattice parameter measurements. Among the possible reasons for this discrepancy the following can be quoted. First, Webb's formula, which contains macroscopic factors, is somewhat artificial for the description of phenomena of an atomic

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On the Question of the Mechanism of Inter-crystalline Internal Adsorption in Dilute Solid Solutions

scale, and can be justified only as a first approximation. Secondly the influence of the relative orientations of neighbouring grains which can change the width of the inter-crystalline zone, and the associated lattice parameter (this change varying from one grain group to another) is not taken into consideration. Thirdly the block structure which can change from one test to another can, as a result of internal adsorption at block boundaries, change the magnitude of the lattice parameter somewhat. These facts are subjects for further investigation. There are 1 table and 11 references, of which 4 are Soviet, 6 English and 1 German.

Card
3/3

ASSOCIATION: Ural'skiy gosudarstvennyy universitet: Institut fiziki metallov AN SSSR
(Ural'sk State University: Institute of Physics of Metals, Acad.Sci. USSR)

SUBMITTED: June 19, 1959

68483

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18.8100

S/126/60/009/01/015/031
E111/E191

AUTHORS: Arkharov, V.I., Borisov, B.S., Vangengeym, S.D., and Sokolova, G.K.

TITLE: Investigation of the Connection between Internal Adsorption in Alloys and their Electrical Resistance 1

PERIODICAL: Fizika metallov i metallovedeniye, 1960, Vol 9, Nr 1, pp 81-85 (USSR)

ABSTRACT: The authors discuss methods which have been used for the experimental study of internal adsorption, noting the general difficulties of such investigations. Their own previous work (Refs 1-3) in which changes in lattice parameters associated with adsorption effects in many binary and ternary alloys were studied, was followed by an attempt to provide a qualitative explanation (Ref 4). Further work has shown that neither the thermodynamic nor a qualitative molecular-kinetic approach is sufficient to elucidate the mechanism of inter-crystallite internal adsorption. The authors show that internal adsorption, being related to the ionic sub-lattice of the crystal, must be closely connected with electronic processes in the dilute solid-solution lattice. They go on to

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EJ11/E191

Investigation of the Connection between Internal Adsorption in Alloys and their Electrical Resistance

consider the electrical resistance of dilute solid-solutions and then to describe experiments aimed at checking the model ideas by resistance determinations on such solutions relative to the grain size of polycrystalline specimens. The alloys studied were Cu - 1% Cd, Cu - 1% In, Cu - 0.6% Sn, and Cu - 1% Sb, made from electrolytic copper (99.99% Cu) and granulated (99.9%) other elements. Alloys were melted in quartz crucibles under borax and after forging and homogenizing annealing were cut longitudinally, each half being drawn into a wire 410 mm long and 0.3 mm in diameter. Resistance was determined at temperatures from -192 to +25 °C directly after drawing (curves 1 in a figure on p 84, showing resistance as a function of temperature) and after low-temperature (400-600 °C) tempering (curves 2) and high-temperature (800-900 °C) tempering followed by slow cooling (curves 3). Resistance for all alloys increased with temperature, decreased somewhat at any given temperature on low-

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E111/E191

Investigation of the Connection between Internal Adsorption in Alloys and their Electrical Resistance

temperature tempering and increased again on high-temperature tempering, due to desorption of the additive atoms from the zones of internal intercrystallite adsorption. The change in resistance due to desorption has a value depending on the difference, z , of the valences of the components: when the z values are even (Cu - In, Cu - Sn) the effect is considerably less than in alloys where it is odd (Cu - Cd, Cu - Sn). This is in full agreement with Friedel's (Ref 6) ideas on electron screening in solid solution, where screening is less for even values of z and there is therefore less difference between the state of the additive atom in a grain and at an inter-crystallite boundary: hence diffusional processes (internal adsorption and desorption) are less pronounced.

Card
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There are 1 figure and 14 references, of which 6 are Soviet, 5 English, 1 German, 1 Japanese and 1 in Acta Metallurgica (probably in English).

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E111/E191

Investigation of the Connection between Internal Adsorption in
Alloys and their Electrical Resistance

ASSOCIATION: Ural'skiy gosudarstvennyy universitet imeni
A.M. Gor'kogo
(Ural'sk State University imeni A.M. Gor'kiy)

SUBMITTED: October 9, 1959

Card 4/4

ARKHAROV, V.I.; BORISOV, B.S.; VANGENGEYM, S.D.

Revealing the characteristics of crystallite interlinking in an
X-ray scattering image. Fiz. met. i metalloved. 10 no.3:367-374
S '60. (MIRA 13:10)

1. Institut fiziki metallov AN SSSR i Ural'skiy gosudarstvennyy
universitet im. A.M.Gor'kogo.
(Crystal lattices) (X rays--Scattering)

21218

18.9200 1145, 1118, 1555

S/126/61/011/003/005/017
E193/E483

AUTHORS: Arkharov, V.I., Borisov, B.S. and Vangengeym, S.D.
TITLE: Manifestation of the Process of Internal Intergranular Adsorption in the X-Ray Scattering Pattern
PERIODICAL: Fizika metallov i metallovedeniye, 1961, Vol.11, No.3, pp.388-391

TEXT: It was shown earlier by the present authors (Ref.8) that the phon intensity of X-ray diffraction patterns, obtained on massive polycrystalline specimens, is higher than that of patterns produced by powder specimens of the same material with grains of the same size. This effect, attributed to the presence of an amorphous layer in the polycrystalline specimens, was much less pronounced in pure materials which indicated preferential adsorption of the impurity atoms in the grain boundary regions. The data, then obtained, were insufficient to form any conclusive opinion regarding the behaviour of impurities in the region of intercrystalline internal adsorption and to determine whether these impurities are present in the solid solution or in the second phase; hence, the investigation described in the present paper. As before, the experiments were carried out on Card 1/4

X

Manifestation of the Process ...

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S/126/61/011/003/005/017
E193/E483

X

both massive and powder specimens, characterized by the same grain size. The experimental materials consisted of electrolytic copper (99.94% purity) and a Cu-base alloy containing 0.35 wt.% antimony. The results of the measurements of the intensity of X-ray scattering are reproduced graphically. In Fig.1, the intensity of the scattered X-ray beam (I , pulses/min) is plotted against the diffraction angle 2θ for (a) plastically deformed specimens, (b) specimens annealed for 2 h at 400°C and (B) specimens annealed for 6 h at 800°C, the continuous and broken curves relating respectively to massive and powder Cu specimens. The results obtained for the Cu-Sb specimens are presented in the same manner in Fig.2, except that graphs (b) and (B) relate respectively to specimens annealed for 2 h at 450°C and for 6 h at 970°C. It will be seen that whereas the $I(2\theta)$ curves for the massive polycrystalline specimens of both Cu and Cu-Sb alloy showed intensity peaks (shifted for the (111) lines of Cu towards the smaller values of 2θ), no intensity peaks were observed on curves constructed for the powder specimens. Since no peaks were observed on the $I(2\theta)$ curves for massive specimens of high (99.999%) purity copper, it was concluded that these peaks are associated with the

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E193/E483

formation of a small quantity of a new phase, precipitated in the region of intercrystalline internal adsorption from the locally supersaturated solid solution. In the case of electrolytic copper in which tin was the main impurity, the appearance of the X-ray scattering intensity peak was caused by the formation of the Cu_3Sn phase; the peak on curves, constructed for the Cu-Sb alloy, was due to the precipitation of the Cu_3Sb phase. There are 2 figures and 9 references: 7 Soviet and 2 non-Soviet.

ASSOCIATIONS: Institut fiziki metallov AN SSSR
(Institute of Physics of Metals AS USSR)
Ural'skiy gosudarstvennyy universitet im. A.M.Gor'kogo
(Ural State University imeni A.M.Gor'kiy)

SUBMITTED: October 3, 1960

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E193/E483

Fig.1.

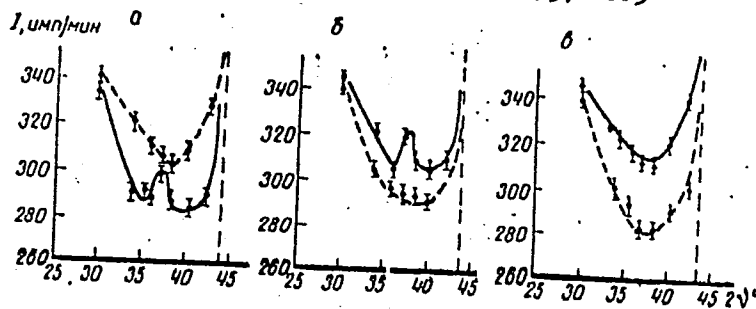
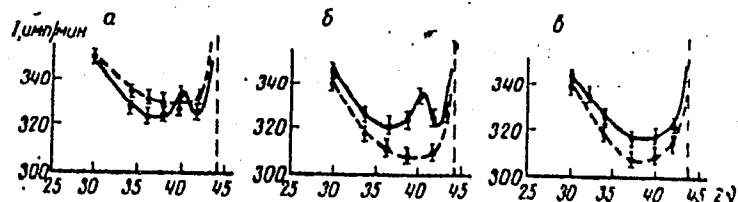


Fig.2.



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Please insert Fig. 1 from 25-29 and Fig. 2 from 30-34

21.2100

24485
S/126/61/011/006/011/011
E073/E335

AUTHORS: Bessonov, A.F., Borisov, B.S. and Vlasov, V.G.
TITLE: Investigation of the Structure of the Primary Oxide
Film on Uranium
PERIODICAL: Fizika metallov i metallovedeniye, 1961, Vol. 11,
No. 6, pp. 959 - 960

TEXT: In studying the mechanism of oxidation of metals investigation of the structure of the primary oxide film formed in air at room temperature during the initial oxidation period is of great importance. For some metals the structure of the films formed during the initial period of oxidation does not differ from those formed during later stages of oxidation. For a number of other metals, for instance, iron and its alloys, a film of a particular structure (type γ - Fe_2O_3) forms during the initial period of oxidation. The primary oxide film is a protective one for most metals; it grows to some limit thickness, then stops growing and prevents further oxidation. The kinetics of growth of the primary films depends on a

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Investigation of the Structure ... S/126/61/011/006/011/011
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number of factors and so far no satisfactory theory on this process exists. The authors carried out investigations on uranium of 99.8% purity which, after rolling, was annealed at 850 °C for six hours in vacuum. Plate specimens 10 x 5 x 3 mm were initially ground with emery paper of varying coarseness and lapped by a ring using high-grade alumina. After polishing the ring was moistened with benzol or ethyl alcohol to prevent access of air to the polished surface. Microscopic investigations have shown that the surface was peppered with fine crystals and the number and size of the crystals increased rapidly. For determining the structure of this primary film electron-diffraction studies were made. For removing the scale films the specimens were etched in nitric acid for 10 min and then washed several times in ethyl alcohol. Oxidation was in air at room temperature for durations of 10, 30, 120 and 240 min. In the second series of experiments, the specimen, after having been taken out of the alcohol (wet), was placed immediately into the chamber of the electron-diffraction

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S/126/61/011/006/011/011
E073/E335

Investigation of the Structure

apparatus from which the air was evacuated so that the specimen surface interacted only with the air which remained in the chamber of the electron-diffraction camera. Part of the specimens were subjected to electron-diffraction investigations immediately after polishing (without etching); back reflection pictures were taken. The obtained interplane distances were compared with X-ray data, obtained by the powder method for uranium oxides. The investigations revealed a cubic phase on uranium oxide with a lattice constant of $a = 5.45 \text{ \AA}$ for all the specimens, which corresponds to the oxide UO_2 . In a second series of

experiments the electron-diffraction patterns contained reflexes from the metallic uranium in addition to lines of the phase UO_2 .

This indicates that in this case the entire thickness of the oxide film participated in the diffraction and that the primary oxide film of uranium consists solely of the phase UO_2 . From

the widening of the Debye lines the size of the forming UO_2 crystals could be determined, which was about 10^{-4} cm. Thus,

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Investigation of the Structure ... ²⁴⁴⁸⁵
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the microscopic and electron-diffraction investigation of oxide films of uranium obtained on oxidation of the latter in air at room temperature indicates that the primary film on uranium is crystalline and consists solely of UO_2 .

(Abstractor's note: this is a complete translation.)
There are 2 Soviet references.

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

SUBMITTED: January 13, 1961

Card 4/4

L 18870-66 EWT(m)/T/EWP(t) IJP(c) JD/HW/NB

ACC NR: AP6007103

(A)

SOURCE CODE: UR/0129/66/000/002/0011/0013

AUTHOR: Arkharov, V. I.; Borisov, B. S.; Tagirova, D. M.

34
31
B

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

TITLE: Controlling the mechanical properties of nickel alloys by internal oxidation

SOURCE: Metallovedeniye i termicheskaya obrabotka metallov, no. 2, 1966, 11-13, and inserts facing p. 48 and p. 49

14 27 18

TOPIC TAGS: nickel, nickel alloy, alloy strengthening, dispersion strengthening, internal oxidation, alloy property

ABSTRACT: The effect of finely dispersed nonmetallic inclusions on the mechanical properties of nickel has been investigated. These inclusions are formed by the diffusion of oxygen (or other gases) into solid nickel, where the oxygen reacts with elements such as magnesium and silicon, which have a higher affinity to oxygen than nickel. The investigation of oxidized commercial-grade nickel and nickel alloys which contained about 0.5% magnesium, silicon, aluminum, or chromium showed that finely dispersed inclusions concentrate at the grain and mosaic block boundaries and increase the strength of nickel alloys. Such a dispersion strengthening is more advantageous than that produced by aging because of the stability of dispersed inclusions. However, the internal oxidation under certain conditions can sharply lower the mechanical properties, owing to an accumulation of inclusions at grain boundaries

Card 1/2

UDC: 620.17:542.943,24

2

L 18870-66

ACC NR: AP6007103

18 3
which brings about embrittlement. This embrittlement can be avoided either by an oxidation of nickel or nickel alloy powder, which is then compacted and sintered, or by oxidation of a solid metal with simultaneous application of plastic deformation or ultrasound. Sintered compacts made of oxidized powder of nickel alloy with 1% aluminum had a tensile strength of 40.5 kg/mm² with a field strength approaching the same value. Plastic deformation during internal oxidation promoted uniform distribution of the inclusions, not only at grain boundaries, but also within the grains. Application of ultrasound at a frequency of 20 kc had a negative effect; it increased sharply the internal oxidation zone and the precipitation of inclusions on grain boundaries. However, it is possible that at some other frequencies, ultrasound would promote an accumulation of inclusions at imperfections, such as the mosaic block boundaries and individual dislocations, and improve the properties of alloy. 16 [WW]

SUB CODE: 11/ SUBM DATE: none/ ORIG REF: 002/ OTH REF: 007/ ATD PRESS: 4217

Dispersion Hardened 18

Card 217-10

S/136/63/000/002/006/006
E193/E383

AUTHORS: Arkharov, V.I., Borisov, B.S. and Ibragimova, D.M.
TITLE: Gaseous corrosion and embrittlement of technical-grade nickel

PERIODICAL: Tsvetnyye metally, ³⁶no. 2, 1965, 72 - 76

TEXT: Tubes made from technical-grade nickel by a process entailing frequent heating of the metal in a gas-filled furnace often show a tendency to cracking. The object of the present investigation was to establish the cause of this fault. The experimental work comprised the following: metallographic examination of specimens of technical-grade nickel and high-purity nickel with small additions of silicon, magnesium, iron, zinc or copper, heated to 1150 - 1200 °C in a gas-filled furnace or in an argon/SO₂ mixture; X-ray diffraction analysis of nonmetallic phase in an internally oxidized layer formed underneath the oxide scale; impact tests; study of the process of internal oxidation with the aid of a hot-stage microscope. The results can be summarized as follows. 1) The main cause of brittleness of technical-grade nickel tubes is internal oxidation of magnesium and silicon
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Gaseous corrosion

S/136/63/000/002/006/006
E193/E383

introduced initially into the metal during smelting as deoxidizing agents, the embrittling effect of magnesium being more pronounced.

- 2) No internal oxidation was observed in specimens prepared from pure nickel with up to 0.5% additions of iron, copper or zinc.
- 3) In the absence of sulphur, the rate of inter- and intra-granular internal oxidation was the same. In the presence of sulphur, a low-melting Ni-S eutectic, formed at the grain boundaries, seemed to facilitate the grain-boundary diffusion of oxygen which aggravated the embrittling effect of internal oxidation to such an extent that individual grains broke off the surface layer.
- 4) The following measures should eliminate or lessen the risk of embrittlement of nickel: replacing magnesium and silicon by other deoxidizing agents such as zinc; preheating the metal in vacuum or in a neutral atmosphere; ensuring that neither the metal nor the furnace atmosphere are contaminated with sulphur.

There are 6 figures.

Card 2/2

BORISOV, B.S.; VOLKENSHEYN, N.V.; ZYRYANOV, P.S.; TALUTS, G.G.

Volt-ampere characteristics of bismuth at low temperatures in a magnetic field. Fiz. met. i metalloved. 16 no.4:624-626 0 '63.
(MIRA 16:12)

1. Institut fiziki metallov AN SSSR.

L 06192-67 EWT(m)/EWP(t)/ETI IJP(c) JD/JG

ACC NR: AP6032528

SOURCE CODE: UR/0413/66/000/017/0128/0128

INVENTOR: Arkharov, V. I.; Borisov, B. S.; Moiseyev, A. I.; Ugol'nikova, T. A.

39
B

ORG: none

TITLE: Method of deposition of intermetallic niobium-tin compound Nb₃Sn coating. Class 48, No. 185661. [announced by the Institute of Physics of Metals, AN SSSR (Institut fiziki metallov AN SSSR)]

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 17, 1966, 128

TOPIC TAGS: niobium tin intermetallic compound, niobium tin compound coating, niobium tin compound deposition, METAL DEPOSITION, METAL COATING, NIOBIUM COMPOUND, TIN COMPOUND

27

ABSTRACT: This Author Certificate introduces a method of deposition of niobium-tin compound coatings. To increase the purity and uniformity of the coating, niobium pentachloride is placed in the reaction chamber and heated to 120-160C, and the gaseous mixture of tin tetrachloride and hydrogen at about 0C is fed directly on the preheated port of the substrate.

SUB CODE: 11, 13/ SUBM DATE: 11Apr64/

Card 1/1 afs

UDC: 669.65' '293:621.793

ACC NR: AP6034569 (N) SOURCE CODE: UR/0020/66/170/006/1303/1305

AUTHOR: Arkharov, V. I. (Academician AN UkrSSR); Borisov, B. S.; Moiseyev, A. I.; Ugol'nikova, T. A.

ORG: Institute of Physics of Metals, Academy of Sciences SSSR (Institut fiziki metallov Akademii nauk SSSR)

TITLE: Vacuum vapor deposition of an Nb_3Sn layer on a wire

SOURCE: AN SSSR. Doklady, v. 170, no. 6, 1966, 1303-1305

TOPIC TAGS: niobium ~~tin~~ compound, superconductor compound, niobium compound metal deposition, vacuum vapor deposition, ~~vacuum vapor deposition unit~~

ABSTRACT: To reduce the clogging of the reaction chamber by nonvolatile niobium trichloride, a new method and equipment (see Fig. 1) for continuous deposition of a superconducting layer of Nb_3Sn on a moving wire has been developed. Wire 1 is continuously fed through seals 2 into a reaction chamber at a fixed speed. Portion 3 of the wire is under treatment and is heated to about 1000C by electric current fed through sliding contacts 4. The bottom part 6 of reaction chamber 5 contains solid niobium pentachloride 7. The chamber is maintained at a temperature of 120-130° by electric furnace 8 controlled by thermocouple 9. Vapors of niobium pentachloride proceed directly to the wire. Hydrogen passing through reservoir 10, located in thermostat 11 and kept at 0°C, is saturated with vapors of tin tetrachloride 12 and then

Card 1/3

UDC: 669.65.293:621.793

ACC NR: AP6034569

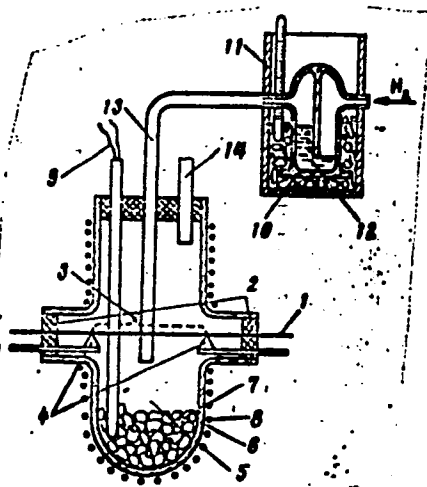


Fig. 1. Unit for vacuum vapor deposition of Nb_3Sn on wire.

passed through pipe 13 to the reaction chamber, where it comes in contact with the wire and forms a layer of Nb_3Sn on its surface. Waste gases are removed through pipe 14. With this arrangement, the zone in which niobium trichloride can be formed is very small and a clogging of the reaction chamber was not observed. The unit was

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ACC NR: AP6034569

tested on ²¹platinum and ¹⁶nichrome wire 0.3 mm in diameter. The temperature of deposition was varied between 800—1200C. A single-phase layer (1—4 μ thick) of Nb₃Sn with β-W structure was obtained. It was established that the thickness of the layer increases with a temperature rise. Orig. art. has: 1 figure.

SUB CODE: 11, 13 ~~34~~ SUBM DATE: 11May66/ ORIG REF: 003/ OTH REF: 013/
ATD PRESS: 5103

Cord 3/3

RASHKOV, S.Ye.; ISAYEV, A.M.; OSTROVSKIY, A.P.; SHNAPIR, Ya.I.; MALYSHEV, V.Ya.;
BORISOV. B.V.

Method of fire drilling. Gor. zhur. no.7:76 J1 '62. (MIRA 15:7)
(Boring machinery)

BORISOV, B.V.

New type of rolls for warping machines. Tekst. prom. 24
no.10:50-51 O '64. (MIRA 17:12)

1. Starshiy inzh.-konstruktor mekhanicheskogo zavoda im.
Karla Libknekhta.

BORESOV, B.Ya., inzh.; RUSEV, M.K., inzh.; SIVASH, M.S., inzh.

Electric contact machining of grooves. Mashinostroenie no.3:
76-77 My-Je '65. (MIRA 18:6)

BORISOV, B.Ya., inzh.; PFTRYKIN, V.V., inzh.

Heavy-feed machining of titanium. Mashinostroenie no.5:35
S-O '65. (MIRA 18:9)

BORISOV, B.YA.

Temperature and temperature range of a cutter
Vest. mash. 32 no. 1, 1952

BODZICH, M.I.; BORISOV, B.Ya.; NEMZER, V.I.; RUSEV, M.K.

Anode-mechanical machine for cutting large ingots for investigating their structure. Mashinostroenie no.3:17 My-Je '63.
(MIRA 16:7)

(Cutting machines)

BORISOV, B.Ya.; KUL'BAKA, Yu.S.; TSOKUR, A.K.

Machining heated metals. Mashinostroitel' no.11:29-30 N '64
(MIRA 18:2)

L 01000-66 EWT(d)/EWT(m)/EWP(c)/EWA(d)/EWP(v)/T/EWP(t)/EWP(k)/EWP(z)/EWP(b)/
EWP(l)/ETC(m) MJW/JD/WW
ACCESSION NR: AP5018802

UR/0121/65/000/007/0026/0027
621.914.1:669.15-194.56

AUTHOR: Borisov, B. Ya.; Kul'baka, Yu. S.

30
29
B

TITLE: Milling hot austenitic manganese steel 18

SOURCE: Stanki i instrument, no. 7, 1965, 26-27

TOPIC TAGS: manganese steel, steel milling, hot steel milling, cutting tool service life, machining efficiency /G13L steel, Hadfield steel

ABSTRACT: To determine the effect of heating on the machinability of G13L [AISI Hadfield] steel and the cutting tool durability, 60 x 50 x 200 mm specimens of cast G13L steel were milled with a single-point cutter fitted with a sintered TI5K6 [15% TiC, 6% Co, 79% W] insert blade. The steel was milled cold and then induction heated to a temperature of up to 650C. It was found that to obtain a cutter service life of 30-60 min, the workpiece temperature should be between 400 and 650C. At lower temperatures the cutter durability was low; at higher temperatures heat losses were excessive and structure transformations occurred in the G13L steel. The optimum cutting speed was within the limits of 140 to 180 m/min. In milling cold G13L steel at a speed of 25 m/sec, the cutter service life was 5 min; it increased to 40 min in mill-

Card 1/2

L 01000-66

ACCESSION NR: AP5018802

ing hot steel at a speed of 160 m/min. The machining efficiency, as a result of higher cutting speed and larger feed, increased 16 to 20 times. With heating, the milling of the G13L steel can be done at a depth of cut of over 10 mm. Hot G13L steel also was successfully milled with a cutter fitted with a sintered TsM-332 ceramic insert blade. At a cutting speed of 550 m/min and a heating temperature of 650C, the service life of the cutter was 30 min. Orig. art. has: 3 figures. [MS]

ASSOCIATION: none

SUBMITTED: 00

ENCL: 00

SUB CODE: MM

NO REF SOV: 005

OTHER: 001

ATD PRESS: 4069

Card 2/2 SP

S/123/61/000/001/007/015
A005/A001

Translation from: Referativnyy zhurnal, Mashinostroyeniye, 1961, No. 1, p. 20,
1B177

AUTHOR: Borisov, B. Ya.

TITLE: The Temperature Change Problem at Metal Cutting

PERIODICAL: V sb.: "Teplovyye yavleniya pri obrabotke metallov rezaniyem".
Moscow, 1959, pp. 127-134, 7

TEXT: The temperature measuring methods with the thermocouple cutter - work piece are considered in the metal cutting process. A sliding mercury contact of new design with a flexible shaft is described. It ensures the constancy of the resistance during the process of elimination of the thermoelectromotive force from the work piece (when turning) or from the tool (when milling or drilling) and eliminates the occurrence of eddy currents in the main electric circuit. The design of the composite cutters (with the mechanical fixing of the hard alloy tip and with the soldered on one) ensures the cold soldered joint in the thermocouple cutter - work piece, when having attached two - three equal tips. When using ordinary cutter with a hard alloy tip soldered on, the least heated point of the

Card 1/2

The Temperature Change Problem at Metal Cutting

S/123/61/000/001/007/015
A005/A001

tip can serve as the cold junction. Hereat, the temperature of the "heated" cold junction is controlled, and the corresponding correction is introduced to the indications of the instrument. The method is described for providing the thermocouple by the welding method. It is based on the use of the capacitor discharge energy, and applied to investigations of the temperature fields of a cutting tool. There are 5 figures and 5 references. ✓

I. Bernshteyn

Translator's note: This is the full translation of the original Russian abstract.

Card 2/2

L 19693-65 EWT(m)/EWA(d)/EWP(t)/EWP(k)/EWP(b) Pf-4 ASD(m)-3 MJH/JD

ACCESSION NR: AP4049463

S/0117/64/000/011/0029/0030

AUTHORS: Borisov, B. Ya.; Kul'baka, Yu. S.; Tsokur, A. K.

TITLE: Cutting of heated metals

SOURCE: Mashinostroitel', no. 11, 1964, 29-30

TOPIC TAGS: metal cutting, hot machining, grinding, hard metal/ G12L steel, G13L steel, T15K6 alloy

ABSTRACT: To decrease the mechanical strength and hardness and thus lower the required cutting power, the machining of heated metals was investigated. High manganese steels G12L and G13L were milled at 400-650C, using cutters made of T15K6 alloy. An electric induction heater was used to heat the metal before it reached the cutting tool. It was found that this method was 6-8 times faster than cold machining, required less cutting force, and gave a better finish than cold machining. Hard alloys containing iron carbides, tungsten, chromium, vanadium, and manganese were ground, using different types of grinding wheels. It was found that hot grinding of these alloys should be performed with corundum wheels at metal temperatures above 600C. Under these conditions the material removal is 20-30 times faster than during cold grinding, while the waste of abrasive decreases by a factor

Card 1/2

L 19693-65

ACCESSION NR: AP4049463

of 7-9. Orig. art. has: 2 figures.

ASSOCIATION: Zaporozhskiy mashinostroitel'nyy institut (Zaporozhye Machine
Construction Institute)

SUBMITTED: 00

ENCL: 00

SUB CODE: IE, MM

NO REF SOV: 000

OTHER: 000

Card 2/2

BORISOV, B. Ya.

BORISOV, B. Ya. kandidat tekhnicheskikh nauk.

Temperature and vibrations due to metal cutting. Vest. mash. 37
no. 9:40-42 S '57. (MLRA 10:9)

(Metal cutting)

BORISOV, Boris Yakovlevich; AFANAS'YEV, V.F., kand. tekhn. nauk,
retsensent; BASKAKOV, I.G., kand. tekhn.nauk, retsensent;
KOVLENKO, V.V., kand. tekhn. nauk, red.; FURER, P.Ya.,
red.; GORNOSTAYPOL'SKAYA, M.S., tekhn. red.

[Laboratory manual in metal cutting]Laboratornyi praktikum
po rezaniu metallov. Moskva, Mashgiz, 1963. 79 p.

(MIRA 16:4)

(Metal cutting—Study and teaching)

BORISOV, B.Ya.; YESHCENKO, G.D.

Wear resistance and the efficient shape of rolling mill
saw teeth. Stal' 25 no.10:927-929 O '65.

(MIRA 18:11)

BORISOV, B.Ya., kand.tekhn.nauk, dotsent; KUL'BAKA, Yu.S., lzsh.

Mil'g heated built-up parts. Vest.mashinostr. 44 no. 2:
79 F '64. (MIRA 17:7)

BORISOV, D.

They are constructing buildings of vital importance. S11'.
bud. 7 no.6:23 Je '57. (MIRA 13:3)
(Ruzhichne--Farm buildings)

BORISOV, D. [Borysov, D.]

On a leading collective farm. Sil' bud. 9 no.8:7 Ag '59.
(MIRA 12:12)

1.Kolkhoz im. 28 Iyunya, Chernovetskogo rayona, Chernovetskoy
oblasti.
(Chernovtsy Province--Farm building)

BORISOV, D. [Borysov, D.]

For beautiful and well-organized villages. S11'.bud. 10
no.4:5-6 Ap '60. (MIRA 13:7)
(Kamenets-Podolskiy--Tiles, Roofing)

BORISOV, D. [Borysov, D.]

Pay greater attention to your work. Sil'. bud. 11 no.1:6-7
Ja '61. (MIRA 14:3)
(Kakhovka--Farm buildings) (Precast concrete construction)

BORISOV, D. [Borysov, D.]

Struggle for new productive victories. Sil'.bud. 11 no.6:7 Je '61.
(MIRA 14:7)
(Belaya Tserkov' District—Construction industry)

BORISOV, D., polkovnik

Pontoon units. Voen. znan. 36 no.9:22-23 S '60.
(Pontoon bridges)

(MIRA 13:9)

BORISOV, Dim.

Bulgaria

[Academic Degrees]

[Affiliation] Chair in Social Hygiene with the ISUL (Katedra po
sotsialna khigiiena pri ISUL); Director V. CHOLAKOV.

[Source] Sofia, Khigiiena, No 5, Sep-Oct 1962, pp 16-21.

[Data] "Methods for Studying the Economy of the Rural Health
Service."

BORISOV, Dim.

Kometa, the new Bulgarian glider. Nauka i tekhn mladezh
14 no.9:11-13 S '62.

BORISOV, Djordje, dr.

Pathological and clinical aspects of potassium metabolism with special reference to surgical patients. Med. pregl. 7 no.2: 126-130 1954.

1. I. Hirurska klinika Medicinskog fakulteta - Beograd; upravnik: prof. dr. Mlivoje Kostic.

(POTASSIUM, metab.

*in surg. patients)

BORISOV, Djordje, dr., Beograd

Water and electrolyte metabolism in aged. Med. glasn. 8 no.5:167-171 May 54.

(ELECTROLYTES, metab.

water-electrolyte balance in aged)

(AGED, physiol.

water-electrolyte metab.)

BORISOV, Dorde, Dr.; OSTOJIC, Branko, dr., (Beograd)

Present-day treatment of acute kidney insufficiencies. Med.
glasn. 9 no.9:317-323 Sept 55.

(KIDNEYS, dis.
insuff., acute, modern ther. (Ser))

PETKOVIC, S.; BORISOV, Dj.

Acute insufficiency of the adrenal glands in surgery. Srpski arh. celok.lek. 83 no.1:82-92 Jan '55.

1. Uroloska klinika Medicinskog fakulteta u Beogradu. Upravnik: doc. dr. Sava Petkovic.

(ADRENAL CORTEX, dis.
insuff., etiol., patho. & ther. (Ser))

DJORDJEVIC-CAMBA, Dj.; BORISOV, Dj.

Biliary peritonitis without perforation. Srpski arh. celok. lek.
83 no.7-8:863-867 July-Aug 55.

1. I Hirurska klinika Medicinskog fakulteta u Beogradu. Upravnik:
Milivoj Kostic.

(PERITONITIS,

biliary, without perf., caused by gallbladder distention,
surg. (Ser))

(GALLBLADDER, dis.

distention causing biliary peritonitis, surg. (Ser))

PETKOVIC, S.; BORISOV, Dj.; OSTOJIC, B.

Peritoneal dialysis in the treatment of acute renal insufficiencies.
Srpski arh. celok. lek. 84 no.1:3-13 Jan 56.

I. Uroloska klinika Medicinskog fakulteta u Beogradu.
Upravnik: prof. dr. Sava Petkovic.

(DIALYSIS,
peritoneal, ther. of acute kidney insuff. (Ser))
(KIDNEYS, dis.
insuff., ther., peritoneal dialysis (Ser))

SLAVKOVIC, Jovan; PETKOVIC, Sava; BORIŠOV, Đorđe; KOVACEVIC, Miroslav; DIMITROV, Aleksandar

Pheochromocytoma with paroxysmal hypertension and acute pulmonary edema. Srpski arh. celok. lek. 88 no.1:75-86 Ja '60.

1. Interna klinika A Medicinskog fakulteta Univerziteta u Beogradu, Upravnik: prof. dr Branislav Stanojevic; Uroloska klinika Medicinskog fakulteta Univerziteta u Beogradu, Upravnik: prof. dr Sava Petkovic.

(PHEOCHROMOCYTOMA compl.)

(HYPERTENSION etiol.)

(ADRENAL GLAND neopl.)

(PULMONARY EDEMA etiol.)

419. TRICHOMYCIN: ITS ANTIBIOTIC PROPERTIES (Russian text) - Borisov
D. B. From the symposium: EKSPER. I KLIN. ISSLEDOVANIYA Nf. 2
(Medgiz, Leningrad) 1956 (89-92)

The optimum medium for trichomycin production by *Trichophyton gypseum* consisted of beer wort (pH 4.9-5.6). Submerged cultivation for 96 hr. produced trichomycin concentrations of 750 mg. per ml. of wort. The activity of trichomycin against *M. pyogenes aureus* was still evident at a dilution of 1:800,000. Trichomycin was not obtained in a chemically pure state. The laboratory procedure for obtaining trichomycin is outlined. The preparation was not toxic on i. p. injection in white mice (3.5g./kg.) and on i. v. injection in white rats and rabbits (0.5-1 g./kg.). Trichomycin has a bacteriostatic and bacteriocidal activity mostly against Gram-positive microorganisms; it has a fungicidal activity against some species of dermatophytes as well. It practically does not influence the growth of Gram-negative microorganisms. Trichomycin is active against staphylococci, streptococci and other microorganisms which had become resistant to penicillin and streptomycin. Beneficial results were obtained from topical application of trichomycin in cases of infected burns, and in treatment of experimental diphtheria. I. p. injection of 20 mg. of trichomycin into white mice (on 2 successive days), experimentally infected with streptococci, produced complete recovery in 60% of cases. (S)

BAKINOV, G.P.; BOKIY, B.V.; BOKIY, O.B.; BORISOV, A.A.; BORISOV, D.F.;
VAYPOLIN, A.F.; GALAYEV, N.Z.; GOLOVIN, G.M.; GORODETSKIY, P.I.;
DUBRAVA, T.S.; ZOLOTAREV, N.D.; KAZAKOVSKIY, D.A.; KELL', L.H.;
KOMAROV, V.B.; MAKHO, Ye.Ya.; MISNIK, Yu.M.; MUSTAL', P.I.;
PISKUNOV, I.N.; SEMEVSKIY, V.H.; KHANUKAYEV, A.N.; SHABLYGIN, A.I.;
POPOV, V.M.

Aleksandr Mikhailovich Aliamskii; an obituary. Gor. zhur. no.2:
76-77 '58. (MIRA 11:3)
(Aliamskii, Aleksandr Mikhailovich, d. 1957)

AUTHOR: Solomonov, M.

TITLE: Combating Sudden Ejections of Coal and Gas From Coal Mines (Bor'ba s vnezapnymi vybrosami uгля i gaza v ugol'nykh shakhtakh) (Conference at the Institute of Mining of the Ac.Sc. USSR) (Soveschaniye v Institute gornogo dela Akademii nauk SSSR)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Otdeleniye Tekhnicheskikh Nauk, 1958, Nr. 4, pp 155 - 156 (USSR)

ABSTRACT: On February 17 - 21, a conference was held at the Institute of Mining of the Ac. Sc. USSR (Mining Institute of the USSR) on the results and prospects of research work on combating sudden ejections of coal and gas and coal explosions in mines. Members of the Central Commission for combating sudden ejections of coal and gas, representatives of scientific research and project institutes and of higher teaching establishments participated in the conference. After a brief opening speech by Academician G.V. Skochinskiy the following papers were read at the conference: "Investigation of the Conditions in the Field of Application of Local Methods of Preventing

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Sudden Ejections of Coal and Gas in Preparatory workings and in dressing (V.F. Khodot); "Development of a Combination of Measures for Safe Mining of Coal in Slopes in Unprotected Zones of Beams Which are Dangerous from the Point of View of Sudden Ejections of Coal and Gas" (G.M. Krivevskiy); "Finding a Safe and Productive System of Working Individual Steeply Sloping Beams Which Have an Inclination to Develop Sudden Ejections of Coal and Gas" (B.S. Lokshin); "Finding an Effective System of Working in Beams for the Purpose of Utilizing Them of Protective Beams" (B.S. Lokshin); "System of Working in Beams Which are Dangerous from the Point of View of Sudden Ejections of Coal and Gas" (D.F. Borisov); "System of Working in Beams Which are Dangerous from the Point of View of Sudden Ejections of Coal and Gas" (D.F. Borisov); "Investigation of the Tendency to Ejections of Coal of the Makheveskiy anthracite

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deposits and justification of Rational Methods of Mining This Coal (I.M. Sidorchov); "Method of Detection of Sections Which are Dangerous as Regards Sudden Ejections in Beams of the Yegorshinskiy mining region" (O.I. Chernov); "Development of Geophysical Methods and Apparatus for Establishing and Studying the Fore-runners of Sudden Ejections of Coal and Gas" (L.G. Anty-fanov); "Results of Scientific Investigations on the Problem of Combating Shocks in Coal Mines During 1957-1958" (A.I. Kuznetsov); "On the State of Designing and Testing of Beams Which are Dangerous from the Point of View of Ejections of Coal and Gas" (K.B. Kagan); "Point of View of Ejections of Coal and Gas" (K.B. Kagan). On the basis of the presented papers and discussions the participants in the conference concluded that in 1957 progress was achieved in the theory of sudden ejections of coal and gas.

Some of the interesting items discussed at the conference are briefly summarized.

BORISOV, D.F.

Precising methods of establishing strip mine operation limits
with definite planning. Zap.Len.gor.inst. 36 no.1:93-114
'58. (MIRA 12:4)

(Strip mining)

BORISOV, D.F.

Drift maintenance costs with direct extraction. Zap.Len.gor.
inst. 36 no.1:115-126 '58. (MIRA 12:4)
(Mining engineering--Costs)

BORISOV, D.F.

Response to R.A.Seletskii's article "Investigating the areas
of minimum curve encountered in solving mining engineering
problems by the analytic method." Ugol' 35 no.3:61-63
Mr '60. (MIRA 13:6)

1. Leningradskiy gornyy institut.
(Mining engineering) (Seletskii, R.A.)

BORISOV, D.F., dotsent

Classification and terminology of underground coal-mining systems. Izv. vys. ucheb. zav.; gor. zhur. no. 11:31-38 '60. (MIRA 13:12)

1. Leningradskiy ordena Lenina i ordena Trudovogo Krasnogo Znameni gornyy institut imeni G.V. Plekhanova. Rekomendovana kafedroy razrabotki plastovyykh mestorozhdeniy Leningradskogo gornogo instituta.

(Coal mines and mining)

MUSTEL', P.I.; DYAD'KIN, Yu.D.; BOKIY, B.V.; KELL', L.N.; KOMAROV, V.B.;
SEMEVSKIY, V.N.; BORISOV, D.F.; GOLOVIN, G.M.; USEVICH, I.V.;
DUBRAVA, T.S.; SHABLYGIN, A.I.; ZOLTOLAREV, N.D.; GALAYEV, N.Z.;
SIGACHEV, A.Ye.; PANENKOV, Yu.I.; SENUK, D.P.; KOPYLOVA, Ye.V.

Pavel Ivanovich Gorodetskii; an obituary. Gor zhur. no.5:77 My '60.
(MIRA 14:3)

(Gorodetskii, Pavel Ivanovich, 1902-1950)

BORISOV, D.F., gornyy inzh.

Concerning a certain error in the theory of planning and
designing open-pit mines. Ugol' Ukr. 6 no.2:27-28 F '62.
(MIRA 15:2)

1. Leningradskiy gornyy institut.
(Strip mining)

BORISOV, D. F.

More about the study of the field of minimum curves in the analytical method. Ugol' 38 no.4:60-61 Ap '63.
(MIRA 16:4)

(Mine management)

S/120/61/000/003/014/041
E095/E135

AUTHOR: Borisov, D.G.

TITLE: Two-channel pulse dosimeter with decade indication system

PERIODICAL: Pribory i tekhnika eksperimenta, 1961, No.3, pp.84-86

TEXT: This instrument switches off a source of pulses after a pre-determined number of pulses (up to 10 000) have been received. It is designed to be used in conjunction with medical equipment. The instrument consists of two counting channels with common registering, indicating and testing stages. Any number between 0 and 9999 may be written in the channel binaries before counting commences. The indication system permits checking the writing-in accuracy, pulse counting and proficiency of each channel. The principles of operation of decade counters and writing-in of numbers in binaries are described. Preliminary tests of the instrument are carried out by sending 10 pulses from the test-block to every decade. In the event of failure of one counting channel the circuit operates on the remaining channel. Both channels have independent power supplies. The counter and Card 1/2

Two-channel pulse dosimeter with S/120/61/000/003/014/041
E095/E135

indication systems are of conventional design. The writing-in of numbers is carried out through press-buttons in grid circuits of binaries, which may be set to one of the two possible states. A single press-button open-circuits grids of all the right triodes of a decade; this puts the whole decade into a state where ten pulses may be counted. If after this any other button is pressed corresponding binaries will be set in the opposite state, i.e. a number will be registered. There are 5 figures.

SUBMITTED: March 2, 1960

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BORISOV, D.G.

Methods for determining the advantages of the hard heading development system. Ugol' Ukr. 5 no.1:46 Ja '61. (MIRA 14:1)

1. Leningradskiy gornyy institut.
(Coal mines and mining)

FORISOV, D. N.

FORISOV, D. N.: "The use of the method of mirror projections in solving some problems of descriptive geometry". Leningrad, 1955. Min Higher Education USSR. Leningrad Order of Labor Red Banner Construction engineering Inst. (Dissertation for the Degree of Candidate of TECHNICAL Sciences)

SO; Knizhnaya Letopis' No. 51, 10 December 1955