

NIKOLAYEV, O.V., prof.; BELIKHOVA, Ye.L., nauchnyy sotrudnik (Moskva)

Case of pheochromocytoma in a child. Probl.endok. i gorm. 5 no.1:
92-93 Ja-F '59. (MIRA 12:3)

1. Iz kliniki Vsesoyuznogo instituta eksperimental'noy endokrinologii
(dir. - prof. Ye.A. Vasyukova).
(PHEOCHROMOCYTOMA, in inf. & child,
case report (Rus))

NIKOLAYEV, O.V., prof.; BELIKHOVA, Ye.L., nauchnyy sotrudnik

Tumor of the adrenal cortex in a 7-month-old infant. Probl.endok.
i gorm. 5 no.1:94-95 Ja-P '59. (MIRA 12:3)

1. Iz kliniki Vsesoyuznogo instituta eksperimental'noy endokrinologii
(dir. - prof. Ye.A. Vasynkova).

(ADRENAL CORTEX, neoplasms,
benign tumor in inf. (Rus))

NAUMOVA, V.I.; BELIKHOVA, Ye.L.

Treatment of thyrotoxicosis in children. Vop. okh. mat. i det.
6 no.4:22-28 Ap '61. (MIRA 14,6)

1. Iz kafedry detskikh bolezney lechebnogo fakul'teta (zav. -
prof. M.M.Bubnova) II Moskovskogo meditsinskogo instituta imeni
N.I.Pirogova (dir. - dotsent M.G.Sirotkina) i Vsesoyuznogo
instituta eksperimental'noy endokrinologii (dir. - prof. Ye.A.
Vasyukova).

(THYROID GLAND—DISEASES)

FLEKSNER, S.Ya.; BELIKHOVA, Ye.L.

Infectious hepatitis in an 8-year old girl with diabetes mellitus.
Vop. okh. mat. i det. 6 no.10:93 0 '61. (MIRA 14:11)

1. Iz Detskoy gorodskoy klinicheskoy bol'nitsy imeni I.V.Rusakova
v Moskve. (HEPATITIS, INFECTIOUS) (DIABETES)

BELIKIN, M.B.

Adenoma of the small intestine in a 5-year-old child producing
seven-ring invagination of a considerable portion of the small
intestine. Khirurgiia 35 no. 11:128 N '59. (MIRA 14:1)
(INTESTINES—TUMORS) (INTESTINES—INTUSSUSCEPTION)

BELIKIN, P.K., kapitan 1-go ranga

Recognition of natural radar reference points. Mor. sbor. 46
no.1:42-48 Ja '63. (MIRA 16:1)

(Radar in navigation)

BELIKINA, N. V.: Master Med Sci (diss) -- "The effect of extract of aloe and of the vitreous body on the coagulability of blood". Saratov, 1959. 12 pp (Min Health RSFSR, Saratov Med Inst), 200 copies (KL, No 14, 1959, 123)

BELIKINA, N.V.; PROKOF'YEVA, L.I.

Reactivity of the body and blood coagulability during surgery,
Trudy Sar. gos. med. inst. 26:26-28 '59. (MIRA 14:2)

1. Saratovskiy meditsinskiy institut, kafedra normal'noy
fiziologii (zav.prof. Ye.S. Ivanitskiy-Vasilenko).
(BLOOD—COAGULATION) (PROTHROMBIN) (OPERATIONS, SURGICAL)

GEORGIYEVA, S.A., prof.; BELIKINA, N.V.; ZHELTOVA, O.P.; IVANOVSKAYA,
Ye.M.; PROKOF'YEVA, L.I.; PROSTYAKOVA, V.I.

[Manual for the practical study of normal physiology] Ucheb-
noe posobie k prakticheskim zaniatiyam po normal'noi fiziolo-
gii. Sost.S.A.Georgievoy i dr. Saratov, 1963. 148 p.
(MIRA 17:3)

1. Saratov. Meditsinskiy institut.

BUROVA, Vilenina Emmanuilovna; SHOR, Semen Mikhaylovich; BELIKOV, A.,
red.; ZAKHAROVA, G., red.; CHEPELEVA, O., tekhn.red.

[Masters of underground storerooms; from the history of the
Il'ich mine in the Donets Basin] Khosiaeva podzemnykh kladovykh;
iz istorii shakhty imeni Il'icha v Donbasse. Moskva, Izd-vo
sotsial'no-ekonom.lit-ry, 1960. 165 p. (MIRA 13:5)
(Donets Basin--Coal miners)

BELIKOV, A.

Letter to the editor. Koks i khim. no.1:63 '60. (MIRA 13:6)

1. Ukrainskiy nauchno-issledovatel'skiy institut Ugleobogashcheniye.
(Coal preparation)

BARJOT, P.; KOLIMYEV, V.I. [translator]; BRYUKHANOV, Ye.N., kapitan I ranga,
redaktor; BRLIKOV, A.F., redaktor; SMIRNOVA, N.I., tekhnicheskly
redaktor

[The navy in the atomic age. Translated from the French] Flot v
atomnyi vek. Perevod s frantsuzskogo V.I.Kolimeeva, Pod red. E.N.
Briukhanova. Moskva, Izd-vo inostrannoy lit-ry, 1956. 271 p.
(Naval art and science) (MIRA 10:1)
(Atomic warfare)

BELIKOV, A.G.; CHIZHOV, P.A.

Second all-technical conference at the Chimkent Lead Plant.

TSvet. met. 29 no.7:86-87 J1 '56.

(MLRA 9:10)

(Chimkent--Lead industry)

ACCESSION NR: AP4035694

8/0057/64/034/005/0847/0852

AUTHOR: Belikov, A.G.; Goncharenko, V.P.; Mishchenko, V.M.; Safronov, B.G.; Slavnyy, A.S.

TITLE: Production of fast plasma bursts with a coaxial plasma gun

SOURCE: Zhurnal tekhnicheskoy fiziki, v.34, no.5, 1964, 847-852

TOPIC TAGS: plasma, plasma gun, coaxialgun, plasma burst, fast ion

ABSTRACT: This paper reports a continuation of previous work by the same five authors (Sb. "Fizika plazmy i problemy upravlyayemogo termoyadernogo sinteza", No.3, Izd. AN USSR, Kiev, 1964). The velocity, density and other properties of deuterium plasma bursts obtained with a coaxial cylindrical plasma gun were determined as functions of the discharge voltage and the time delay between admission of the gas and initiation of the discharge. Plasma bursts were obtained which contained more than 10^{17} particles and had densities greater than 10^{13} cm^{-3} and velocities greater than 8 to 9×10^7 cm/sec . The plasma gun consisted of two coaxial cylinders 32 mm and 72 mm in diameter and 17.5 cm long. One cubic centimeter (standard conditions) of deuterium was admitted to the annular space through openings in the wall of the in-

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ACCESSION NR: AP4035694

ner cylinder. Gas began to enter the interelectrode space 170 microsec after the valve was triggered, and the valve remained open for 80 microsec. A 27-microfarad capacitor charged to 20 kV or less was discharged through the gun. The resulting plasma burst was observed in a 95-mm glass drift tube. No confining axial magnetic field was used. The plasma bursts were analyzed with a Thomson mass spectrometer located 2.5 meters from the source. The velocity of the bursts was determined from the flight time between two external magnetic probes located 80 cm and 200 cm from the gun. The density was monitored by observing the cut-off of 8-mm microwaves at 80 cm from the source. In some cases the total energy of the plasma was estimated from calorimetric measurements. The ions in the plasma bursts were distributed over a wide range of energies. The velocity of the burst as determined from the flight time between the two magnetic probes agreed with that calculated from the ion energies as measured with the mass spectrometer. The highest velocities were achieved with a delay (between triggering the gun and applying the potential) of 200 to 250 microsec. When the delay was less than 170 microsec, gas did not enter the interelectrode space until after the potential had been applied. Under these conditions only slow bursts were formed. Normally there were two bursts per shot, and these had widely different velocities. When the delay was increased beyond about 250

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ACCESSION NR: AP4035694

microsec, the slow burst grew in size at the expense of the fast one, and the two bursts tended to merge. Orig.art.has: 2 formulas, 9 figures and 1 table.

ASSOCIATION: none

SUBMITTED: 11May63

DATE ACQ: 20May64

ENCL: 00

SUB CODE: ME, NP

NR REP SOV: 001

OTHER: 002

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Card

ACCESSION NR: AT4036068

S/2781/63/000/003/0255/0261

AUTHORS: Belikov, A. G.; Goncharenko, V. P.; Mishchenko, V. M.;
Safronov, B. G.; Slavny*y, A. S.

TITLE: Investigation of coaxial plasma accelerator

SOURCE: Konferentsiya po fizike plazmy* i problemam upravlyayemogo termoyadernogo sinteza. 3d, Kharkov, 1962. Fizika plazmy* i problemy* upravlyayemogo termoyadernogo sinteza (Plasma physics and problems of controlled thermonuclear synthesis); doklady* konferentsii, no. 3. Kiev, Izd-vo AN UkrSSR, 1963, 255-261

TOPIC TAGS: plasmoid, plasmoid acceleration, plasma source, high temperature plasma, plasma density, discharge plasma

ABSTRACT: A coaxial electrodynamic plasma accelerator is investigated in order to determine some of its parameters, namely the plasmoid velocity, the plasmoid density, the contamination of the plas-

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ACCESSION NR: AT4036068

ma with heavy ions, and the energy distribution of the ions. The electrodynamic plasma accelerator consists of two coaxial cylinders (72 and 32 mm inside diameter, length of accelerating electrodes 175 mm). The pressure used was $(1--3) \times 10^{-3} \text{ m/m}^2$, and the working volume was filled with gas using a pulsed valve described by J. Marshall (Fizika goryachey plazmy* i termoyaderny*ye reaktsii, Atomizdat, M. 1959, p. 290). The acceleration of the plasma by the coaxial accelerator was investigated as a function of the delay between the start of the entry of the gas into the working volume (more accurately, the start of operation of the hammer of the valve) and the discharge of the source. The discharge was investigated with an internal magnetic probe. The plasmoid velocity was measured with optical (photomultiplier) and external magnetic probes. The mass composition and the energy of the ions of the plasmoids were determined by the Thomson parabola method. The results have shown that two plasmoids, moving with different velocities, are produced during the acceleration of a plasma with a coaxial electrodynamic

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source. The formation of the plasmoids is not connected with the periodicity of the discharge in the source. Further research is necessary to ascertain the nature of the first plasmoid. The charged particle density exceeds 10^{13} cm⁻³, the hydrogen ion energy in the fast plasmoid reaches 4--5 keV, and the plasmoid impurities are high, 50--60% in the slow plasmoid and less in the fast one. Exact determination of the impurity contents in the fast plasmoid is difficult. Orig. art. has: 10 figures.

ASSOCIATION: None

SUBMITTED: 00

DATE ACQ: 21May64

ENCL: 01

SUB CODE: ME

NR REF SOV: 002

OTHER: 003

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ACCESSION NR: AT4036068

ENCLOSURE: 01

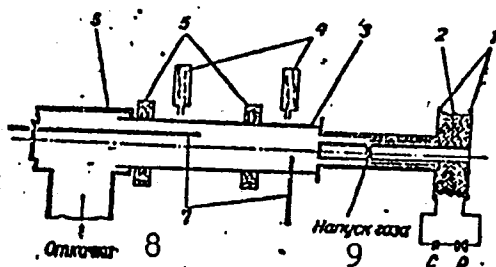


Diagram of accelerator: 1 - source electrodes, 2 - insulator, 3 - glass tube, 4 - photomultiplier, 5 - external magnetic probe, 6 - vacuum chamber, 7 - internal magnetic probe, 8 - vacuum, 9 - gas inlet

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ZARYANKIN, A.Ye., kand. tekhn. nauk; BELIKOV, A.G., inzh.

Effect of the form of the rims of a channel in front of the
nozzle apparatus on its efficiency with large input overlaps.
Teploenergetika 11 no.4:49-52 Ap '64. (MIRA 17:6)

1. Moskovskiy energeticheskiy institut.

BELIKOV, A.G.; GONCHARENKO, V.P.; MISHCHENKO, V.M.; SAFRONOV, B.G.;
SLAVNYI, A.S.

Production of fast plasma clots using a coaxial source. Zhur.
tekh. fiz. 34 no.5:847-852 My'64 (MIRA 17:3)

PONOMAREV, V.D.; BELIKOV, A.I.

Sulfur dioxide concentration: b) Comparative rate of desorption
of sulfuric anhydride from various absorbents. Izv.AN Kazakh.
SSR Ser.khim. no.1:36-38 '47. (MLRA 9:8)
(Sulfur trioxide) (Desorption)

SOV-3-58-9-22/36

AUTHOR: Belikov, A.I.

TITLE: Intervuz Scientific and Methodical Conferences (Mezhduvuzov-skiye nauchnyye i metodicheskiye konferentsii). A Discussion of Questions of Labor and Wages (Obsuzhdeniye voprosov truda i zarabotnoy platy)

PERIODICAL: Vestnik vysshey shkoly, 1958, Nr 9, pp 67-69 (USSR)

ABSTRACT: Scientific research work on questions of labor organization, wages, and technical standardization is being performed by about 100 scientific institutes, the chairs of economic and political economy of many vuzes and by enterprises' workers. To coordinate this research, a Nauchno-issledovatel'skiy institut truda (Scientific Research Institute of Labor) has been founded with a Central Bureau for Establishing Norms. The USSR Ministry of Higher Education requested that the higher educational institutions study and generalize the experience of this work. The Ministry's Scientific-Technical Council made a list of research on 250 themes, to be worked out by economics chairs during 1958-1960. About 80 of these themes are devoted to the study of reserves for labor productivity growth, to an analysis of lowering the cost of production, to the working out of proposals for the

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SOV-3-58-9-22/36

Intervuz Scientific and Methodical Conference. A Discussion of Questions
of Labor and Wages

this Committee's Branch. The speakers strongly criticized the deficiencies of the vuzes' scientific work in this field. O.V. Kozlova, Director of the Moskovskiy inzhernerno-ekonomicheskii institut (Moscow Engineering and Economic Institute) reported on the work already being done in this field at her institute. D.I. Sankin, Docent of the Chair for National-Economic Planning and Related Economics of the Moskovskiy finansovyy institut (Moscow Financial Institute) told how 15 instructors and students of the Financial Institute and of the All-Union Polytechnical Correspondence Institute were working on the theme "Reserves for the Growth of Labor Efficiency at Machine Building Enterprises". Dotsent A.M. Levin of the L'vovskiy poligraficheskii institut (L'vov Polygraphical Institute) informed the Khar'kov conference of the research conducted by his institute. Research in the field of labor and wages still do not occupy a proper place in the higher schools' scientific work. The most serious deficiency in elaborating problems of labor and wages is the lack of coordination in research work, the multitude of themes and duplication of the questions studied. The article

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Intervuz Scientific and Methodical Conference. A Discussion of Questions of Labor and Wages

refers to other deficiencies, which were partly set forth by V.D. Bubnov of the Leningrad Sovnarkhoz, S.N. Petrov of the Leningrad Plant "Elektrosila" and V.N. Gubenko from the Khar'kov Plant "Svet Shakhtera". The recommendations adopted enumerate the most important problems. The Board of the USSR Ministry of Higher Education, having discussed the conference results, in a resolution outlined concrete measures the realization of which will increase research work by higher schools in the field of labor and wages. There is 1 Soviet reference.

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GENKIN, K.I., doktor tekhn.nauk; MOROZOV, K.A., kand.tekhn.nauk; SYUN'
SHAN'-I [Hsün Shan-1], inzh.; EFENDIYEV, V.S., inzh. Prinsipialni
uchastiye: ROZENBAUM, V.M.; BELIKOV, A.I.

Performance of a gas diesel engine developed on the basis of the
2D-100 two-stroke diesel design. Energomashinostroenie 7
no.8:9-11 Ag '61. (MIRA 14:10)
(Gas and oil engines)

~~BELIKOV, A.K.~~

The assembly-line system of manufacturing metal toys. Det.
khor. igr. no.1:36-37 '55. (MLRA 10:2)

1. Starshiy nauchnyy sotrudnik Nauchno-issledovatel'skogo
instituta igrushki.

(Toys)

BELIKOV, Aleksandr Mikhaylovich

DECEASED
c.1963

1964

Coal
Coal preparation
Donets Basin

AUTHOR: BELIKOV, A.M. 86-58-3-32/37
Belikov, A.M., Engr Maj

TITLE: The Use of Remote Indicator of Radio Direction Finder
by Flight Supervisor (Ispol'zovaniye vynosnogo indikatora
radiopelengatora rukovoditelem poletov)

PERIODICAL: Vestnik vozdushnogo flota, 1958,^{1/0} Nr 3, pp 81-82 (USSR)

ABSTRACT: The article deals with the problem of how to facilitate the
control of flights by the flight supervisor. The author
suggests that the flight supervisor should have a remote
indicator of the radio direction finder in his immediate
vicinity. For that purpose the cathode-ray tube should
be disconnected from the assembly and be installed at the
desk of the flight supervisor. Around the tube is placed
the azimuth scale and the map of the flight area and to the
center of the tube is fastened a slide rule with a range
scale. The map and the tube of the remote indicator should
be so placed that the direction of takeoff and landing on
them would be parallel to the direction of the runway.
One diagram.

AVAILABLE: Library of Congress
Card 1/1

BELIKOV, A.M.

Organization of storerooms and intraplant conveying in machinery
plants in Switzerland. Stan. i instr. 35 no. 4:35-38 Ap '64.
(MIRA 17:5)

BELEKOV, A.M.

Mechanization and automation of jig-boring machines. Stan.
1 12345. 35 no.11:30-37 N 164.

(MIR: 18:3)

L 62949-65 ENT(w)/ENP(w)/EPF(c)/ENA(1)/T/ENP(t)/ENP(e)/ENP(b)/ENA(c)

IJP(c) JD

ACCESSION NR: AR5079144

UR/0137/65/000/007/1059/1059

SOURCE: Ref. zh. Metallurgiya, Abs. 71378

AUTHOR: Gol'dshteyn, Ya. Ye.; Charushnikova, G. A.; Belikov, A. M.;
Verbovetskaya, D. Ye.

TITLE: Properties and special characteristics of phase transitions of high manganese steels

CITED SOURCE: Sb. Teoriya i praktika metallurgii. Vyp. 7. Chelyabinsk, 1964, 189-199

TOPIC TAGS: manganese steel, phase transition, brittleness, solid mechanical property, nitrogen, nitride, manganese containing alloy, molybdenum containing alloy, tungsten containing alloy

TRANSLATION: Determinations were made of the mechanical properties and the tendency toward cold brittleness of steels containing (in %) 0.06-0.11 carbon, 6.84-8.89, residual aluminum up to 0.13 or residual titanium up to 0.2. Investigations were also made by microscopic, X-ray structural, dilatometric, and durometric methods. With the composition adopted, a satisfactory combination of

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L 62945-65
ACCESSION NR: AR5019144

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properties ($\sigma_g \geq 60 \text{ kg/mm}^2$, $a_{k-40} 9-12 \text{ kgm/cm}^2$) is ensured by a small grain size and a two phase structure, consisting of a thin mixture of ferrite and austenite, resistant at very low temperatures. A similar structure appears on heating up to 600-625C steels which have been previously hardened or normalized. The harmful effect of manganese on the position of the threshold of cold brittleness is due not only to the manganese itself, but also to the nitrogen introduced into the steel with the ferromanganese or the metallic manganese. It is necessary to neutralize the harmful effect of nitrogen dissolved in the steel by bonding it in stable nitrides and carbonitrides (residual aluminum or residual titanium 0.05-0.07%). Subsequent alloying with 6-9% manganese, molybdenum (up to 0.5%) or tungsten (up to 1%) aid in a further lowering of the threshold of cold brittleness ($a_{k-40} 17-20 \text{ kgm/cm}^2$). Orig. art. has: 7 literature titles. I. Tulupova

SUB CODE: MM

ENCL: 00

Card 2/2

SOV/137-58-9-19789 D

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 9, p 239 (USSR)

AUTHOR: Belikov, A.M.

TITLE: X-ray Determination of the Constants of the Quasi-elastic Force of Heat Fluctuations and of the Coefficients of High-melting Metallic Phases (Rentgenograficheskoye opredeleniye konstant kvaziuprugoy sily teplovykh kolebaniy i koeffitsiyentov teplovogo rasshireniya tugoplavkikh metallicheskih faz)

ABSTRACT: Bibliographic entry on the author's dissertation for the degree of Candidate of Technical Sciences, presented to the Mosk. in-t stali (Moscow Institute of Steel Industry), Moscow, 1958

ASSOCIATION: Mosk. in-t stali (Moscow Institute of Steel Industry), Moscow

1. Metals--Melting 2. Metals--Phase studies 3. X-rays--Applications

Card 1/1

AUTHORS: Belikov, A. M., Umanskiy, Ya. S. SOV/163-58-1-35/53

TITLE: The Characteristic Temperatures of the Heat Vibration and the Thermal Expansion of Some High Melting Metallic Phases (Kharakteristicheskiye temperatury teplovykh kolebaniy i teplovoye rasshireniye nekotorykh tugoplavkikh metallicheskikh faz)

PERIODICAL: Nauchnyye doklady vysshey shkoly. Metallurgiya, 1958, Nr 1, pp 192-197 (USSR)

ABSTRACT: The inclusion phase in the alloy of molybdenum with niobium and titanium was investigated. Nitrides of the above mentioned elements were produced according to the powder metallurgical method in the nitrogen flow at 1000 - 1200°C. In these investigations the lattice constant and the quantity of $m \theta^2$ of the composition of the alloys Mo-Nb and Mo-Ti were investigated. From the shape of the curves may be seen that with the solubility of titanium and niobium in molybdenum the quantity $m \theta^2$ varies in the case of a lower content of titanium or niobium in the alloys. This

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S07/163-58-1-35/53

The Characteristic Temperatures of the Heat Vibration and the Thermal Expansion of Some High Melting Metallic Phases

variation of $m \theta^2$ explains the strong interaction between the atoms of titanium and especially of niobium with atoms of molybdenum rich alloys. The values for $m \theta^2$ of nitrides are equal to those values of pure metals.

From the investigation of the carbides TiC, ZrC, NbC and WC it may be seen that these compounds have the same combining power as metals.

In table 2 are given data on the combining powers and coefficients of linear expansion of the metals mentioned above, and their metallic phases such as NbN, ZrN, Ta₂N, TiC, Mo₂C

and NbC. In the investigation of the carbides of molybdenum and tungsten as well as of all nitrides it was found that the constant of the heat vibrations changes only little as compared to pure iron.

It is assumed that in all phases the electrons of carbon actively effect the structure of the d-orbits of the metals of the fourth and fifth group. The electric conductivity of the carbides of molybdenum and tungsten is lower than the electric conductivity of pure molybdenum and tungsten metals.

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The Characteristic Temperatures of the Heat Vibration and the Thermal Expansion of Some High Melting Metallic Phases

There are 2 figures, 2 tables, and 9 references, 9 of which are Soviet.

ASSOCIATION: Moskovskiy institut stali (Moscow Steel Institute)

SUBMITTED: October 1, 1957

Card 3/3

24.7000

75988

SOV/70-4-5-10/36

AUTHORS: Belikov, A. M., Umanskiy, Ya. S.

TITLE: Study of the Anisotropy of the Atomic Thermal Vibrations in Some Amphoteric-Metal Carbides and Diborides Having Hexagonal Structures

PERIODICAL: Kristallografiya, 1959, Vol 4, Nr 5, pp 684-686 (USSR)

ABSTRACT: The metal carbides were produced by sintering the compressed mixtures of the powdered metals with carbon black, and diborides by boroncarbide reduction. The X-ray diffraction patterns were taken at various temperatures by copper radiation, except for TiB_2 for which Mo-radiation was employed. The change in the spacing of the diffraction maxima for reflections from the atomic planes normal (or nearly normal) to the a and c axes, and the weakening of the diffraction intensities at higher temperatures furnished the data for computation of the thermal expansion coefficients α_a and α_c and of the characteristic temperatures θ_a and θ_c . The computed figures and the

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Study of the Anisotropy of the Atomic Thermal
Vibrations in Some Amphoteric-Metal Carbides
and Diborides Having Hexagonal Structures

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$c:a$ ratios of the studied compounds are compiled in the table. The experiments disclosed the diminishing of the lattice distortions and increase of a and c at higher temperatures. The difference in Q_a and Q_c values points to the differing bond energy along the respective axes. The bond energies in diborides proved to be about the same as in the respective carbides. As a general rule, the anisotropy of the thermal vibrations in the studied carbides and diborides can, according the authors, be interpreted by the prevalence of Me-X over Me-Me bonds. There is 1 table; and 6 references, 2 German, 1 U.S., 1 British, 1 Soviet, 1 French. The U.S. and British references are: W.H. Zachariasen, F. N. Ellinger, Acta Crystallogr., 8, 7, 431, 1955; I. Thewlis, Acta Crystallogr., 5, 6, 1952.

ASSOCIATION:
Card 2/3

Moscow Steel Institute imeni I. V. Stalin (Moskovskiy)

Study of the Anisotropy of the Atomic Thermal Vibrations in Some Amphoteric-Metal Carbides and Diborides Having Hexagonal Structures

75982
SOV/10-4-5-10/36

institut stali imeni I. V. Stalina)

SUBMITTED: November 19, 1959

Compound c/a	c/a in an ideal structure	State of the Sample	$(m\theta^2)_a$ g·degree ² ·10 ¹⁸	$(m\theta^2)_c$ g·degree ² · 10 ¹⁸	Temp Range °C	$\alpha_a \cdot 10^{-6}$ degree ⁻¹	$\alpha_c \cdot 10^{-6}$ degree ⁻¹
Nb ₂ C 1,601	1,033	compressed	21,6±4,8	11,5±2,0	190-12	7,0±0,3	8,7±0,4
Nb ₂ C 1,601	1,633	powder	14,4±3,7*	13,2±2,3	190-17	6,6±3,1	8,6±1,0
W ₂ C 1,578	1,033	powder	21,6±3,4	18,0±2,7	270-17	5,8±0,2	7,4±0,3
W ₂ C 1,578	1,633	slide	29,6±6,6	19,3±2,9	400-12	6,4±0,16	8,1±0,22
Mo ₂ C 1,574	1,033	slide	$(m\theta^2)_a = (m\theta^2)_c$	21,3±4,0	270-17	6,0±0,6	8,9±0,4
Mo ₂ C 1,574	1,633	powder	$(m\theta^2)_c = (m\theta^2)_c$	34,9	190-12	7,8±0,5	9,3±0,7
ZrB ₂	—	slide	—	34,4±5,6	400-17	6,05±0,1	8,8±0,3
ZrB ₂	—	slide	—	34,4±5,6	500-17	6,63±0,1	7,35±0,1
WC 0,978	1,0..	slide	$(m\theta^2)_a = (m\theta^2)_c$	32,4±4,6	400-22	3,84	3,60
TiB ₂	—	slide	$(m\theta^2)_a = (m\theta^2)_c$	26	400-17	5,6±0,8	5,1±2,2

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S/137/61/000/002/043/046
A006/A001

Translation from: Referativnyy zhurnal, Metallurgiya, 1961, No: 2, p. 43 # 2133

AUTHOR: Belikov, A. M.

TITLE: Roentgenographical Determination of the Coefficients of Thermal Expansion

PERIODICAL: "Sb. nauchno-tekhn. tr. N.-1. in-t metallurgii Chelyab. sovmarkho-za", 1960, No. 1, pp. 139-144

TEXT: The coefficient of thermal expansion, determined by the X-ray method, exceeds somewhat the coefficient of thermal expansion found by dilatometric measurements. The difference between these coefficients is the greater, the greater the ratio of the surface to the volume of material participating in the reflection of the X-rays. The connection is admitted between the effect found and the difference in the amplitudes of thermal oscillations of atoms located on the surface and within the crystal, or with defects of the crystal lattice, concentrated on the crystal surface. It is pointed out that the comparison of roentgenographically determined coefficients of thermal expansion on

Card 1/2

S/137/62/000/003/103/191
AO60/A101

AUTHORS: Gershman, R. B., Belikov, A. M., Vasil'yeva, S. M.

TITLE: Curie temperature of cementite alloyed with nickel, manganese, and silicon

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 3, 1962, 4, abstract 3I24
("Sb. nauchno-tekhn. tr. N.-1. in-t metallurgii Chelyab. sovna-
khoza", 1961. no. 3, 195-199)

TEXT: A determination was made of the Curie temperature T_C of alloyed cementite as a function of its Ni, Mn, and Si content. The investigation made use of steel with the following composition (in %): C 0.55 - 0.70, Mn 0.16-4.33, Ni 0.12 - 11.1, Cr 0.09 - 0.20, Si 0.020 - 0.028. It was established that Ni has no noticeable effect upon the T_C of the cementite. Mn strongly lowers the T_C and, at high Ni contents the T_C is located in the neighborhood of 0°C . The Si seems to increase the T_C of the cementite but since a large quantity of non-metallic silicate impurities is contained in the steel, making it impossible to obtain a pure carbide deposit, the problem of the influence of Si requires additional investigation.

[Abstracter's note: Complete translation]
Card 1/1

A. Rusakov

LISNYAK, S.S.; BELIKOV, A.M.; MOROZOV, A.N.

Kinetics and the mechanism of chromite reduction by solid
carbon. [Sbor. trud.] Nauch.-issl.inst.met. no.4:3-11
'61. (MIRA 15:11)

(Chromite)
(Chemistry, Metallurgic)

S/180/62/000/006/004/022
E071/E151

AUTHORS: Belikov, A.M., and Savinskaya, A.A. (Chelyabinsk)

TITLE: Vanadium and niobium carbides in steel

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye
tekhnicheskikh nauk. Metallurgiya i toplivo,
no.6, 1962, 67-72

TEXT: The existence of oxygen in the vanadium and niobium carbides in alloy steels containing them was studied, as well as the effect of heat treatment on the carbon content of the carbides. Two niobium steels (1.35% and 1.50% Nb, respectively, and 0.67-0.70% C) and one vanadium steel (0.97% V, 0.71% C) were used and were examined in the fully annealed, normalised, and hardened states. The carbides were separated either electrolytically or chemically. The gas content of the steels and of the separated carbides was determined by vacuum melting. The carbon in the carbides was determined chemically and also from the lattice spacing of the carbide, as determined with a diffractometer YPC-50M (URS-501). It was established that after any thermal treatment of the niobium steel in the temperature range 650-1300 °C
Card 1/2

Vanadium and niobium carbides ...

S/180/62/000/006/004/022
E071/E151

and after hardening and annealing of vanadium steel in the temperature range 625-1050 °C, the combined carbon content of the carbides VC_{1-x} and NbC_{1-x} remained practically constant. In the carbide VC_{1-x} , separated from the vanadium steel, there was some oxygen and possibly nitrogen, the atoms of which occupy the vacancies unfilled by carbon atoms. Thus, after the formation of vanadium carbide during the annealing of hardened steel, oxygen diffuses into the carbide, occupying a considerable proportion of vacant octahedral sites in the carbide lattice. X-ray data could not be used to prove the same for niobium carbide, but gas analysis indicated that the presence of oxygen and nitrogen in NbC_{1-x} was possible.

There are 1 figure and 5 tables.

SUBMITTED: February 26, 1962.

Card 2/2

24.7000

39265
S/126/62/013/005/024/031
E111/E435

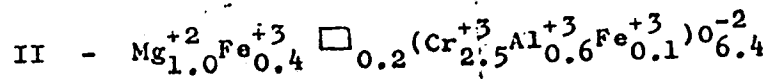
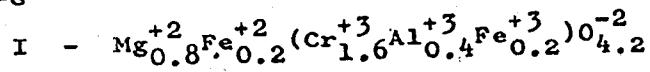
AUTHORS: Belikov, A.M., Lisnyak, S.S., Morozov, A.N.
TITLE: Chrome-spinellides and crystallochemical changes during their firing
PERIODICAL: Fizika metallov i metallovedeniye, v.13, no.5, 1962, 774-776

TEXT: The structural peculiarities of natural chrome-spinellides with the general formula $(Mg,Fe)(Cr,Fe,Al)_2O_4$ have not been studied sufficiently. The authors have shown that there is a difference between the lattice spacing of the stoichiometric and the excess-oxygen chrome-spinellides, which cannot be explained by the difference in chemical composition. Using specially purified specimens, the authors studied the effect of heating in vacuum and in air on lattice spacing. They have tried to compare the heat-treatment-produced change in the spacing and the degree of inversion calculated from it for synthetic $Mg_{1-x}Fe_xCr_2O_4$ and $Mg(Cr_yFe_{2-y})O_4$ spinellides with the change in lattice spacing of the natural compound. The two types are
Card 1/3

S/126/62/013/005/024/031
E111/E435

Chrome-spinellides ...

assigned the formulae



where $\square_{0.2}$ is the number of vacancies in the tetrahedral spaces in the spinel molecule which must be filled by cations. When type II are heated in vacuo, cations move into these vacancies from the octahedral pores: this and the change of Fe^{3+} into Fe^{2+} produces the increase in the lattice spacing. Since the stoichiometric type I is free from such vacancies, heating in vacuo has no effect. On heating in air, vacancies remain in both types. There are 2 figures and 1 table.

Card 2/3

Chrome-spinellides ...

S/126/62/013/005/024/031
E111/E435

ASSOCIATION: Nauchno-issledovatel'skiy institut metallurgii
g. Chelyabinsk (Scientific Research Institute of
Metallurgy, Chelyabinsk)

SUBMITTED: May 3, 1961 (initially)
October 31, 1961 (after revision)

J

Card 3/3

BELIKOV, A.M.; SAVINSKAYA, A.A.

Anisotropy of temperature vibrations of atoms in cementite crystals.
Fiz. met. i metalloved. 14 no.2:299-301 Ag '62. (MIRA 15:12)

1. Chelyabinskiy institut metallurgii.
(Crystal lattices)

S/126/62/014/005/009/015
E111/E435

AUTHORS: Belikov, A.M., Gershman, R.B.

TITLE: Characteristic temperature of alpha-iron alloyed with manganese, molybdenum, silicon and carbon

PERIODICAL: Fizika metallov i metallovedeniye, v.14, no.5, 1962, 766-769

TEXT: The object of this work was to estimate the atomic interaction forces ($m \odot^2$) involved when alloying alpha-iron. The characteristic temperature was found from the elastic moduli as measured by the dynamic resonance method. The single-phase solid solutions studied contained up to the following weight percentages of alloying elements: 5.4 Mn, 5.3 Mo, 6.3 Si, 1.2 C. Within these concentrations the characteristic temperature of alpha-iron changes only just noticeably on alloying with silicon and hardly at all on alloying with molybdenum. Manganese (5.8 at.%) and carbon (5.47 at.%) lower the temperature by 6 and 10°C respectively. Within the same concentration ranges the value of $m \odot^2$ falls by 3, 5 and 7% on alloying alpha-iron with manganese, silicon and carbon respectively, and rises by

Card 1/2

✓

Characteristic temperature ...

S/126/62/014/005/009/015
E111/E435

2.5% on alloying with molybdenum. There are 3 tables.

ASSOCIATION: Chelyabinskiy nauchno-issledovatel'skiy institut
metallurgii (Chelyabinsk Scientific Research
Institute of Metallurgy) ✓

SUBMITTED: May 18, 1962

Card 2/2

LISNYAK, S.S.; BELIKOV, A.M.; MOROZOV, A.N.; VSHIVKOVA, L.A.

Chromium spinelide behavior during heating in reducing and oxidizing gaseous media. *Ogneupory* 27 no.9:417-420 '62. (MIRA 15:8)

1. Nauchno-issledovatel'skiy institut metallurgii Chelyabinskogo sojeta narodnogo khozyaystva.

(Spinel group) (Metals, Effect of temperature on)

DAVYDOV, V.I.; BELIKOV, A.M.; IGNAT'YEVA, N.I.; VERBOVETSKAYA, D.Ye.

Reaction of germanium dioxide with iron. Zhur.prikl.khim. 35 no.11:
2543-2546 N '62. (MIRA 15:12)

(Germanium oxide)

(Iron)

GOL'DSHTEYN, Ya.Ye.; ~~BEЛИKOV, A.M.~~, kand. tekhn. nauk, retsenzent;
GLADKOVSKIY, V.A., kand. tekhn. nauk, retsenzent;
KOROTUSHENKO, G.V., kand. tekhn.nauk, retsenzent; BONDIN,
Ye.A., laureat Gosudarstvennoy premii inzh., retsenzent;
KALETINA, A.V., ved. red.; DUGINA, N.A., tekhn.red.

[Low-alloy steel in machinery manufacture] Niskolegirovannye
stali v mashinostroenii. Moskva, Mashgiz, 1963. 239 p.

(MIRA 16:8)

(Machinery--Design and construction) (Steel alloys)

S/279/63/000/001/011/023
E075/E452

AUTHORS: Gershman, R.B., Belikov, A.M., Zvereva, V.A.,
Vasil'yeva, S.M. (Chelyabinsk)

TITLE: Curie points of cementite after isolation from alloy
steels

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye
tekhnicheskikh nauk. Metallurgiya i gornoye delo.
no.1, 1963, 119-120

TEXT: Since the magnetic properties of isolated alloyed
cementite have not been adequately studied and existing literature
data are contradictory, the authors determined the Curie points of
cementite isolated from seven alloy steels (composition given).
The steels were induction melted and the ingots forged into rods
from which specimens were prepared. The specimens were homogenized
and hardened from 950 or 1300°C in a 10% potassium hydroxide
aqueous solution or oil. Each type of steel was annealed by
5 to 6 different methods to obtain the maximum content of the alloy
element in cementite. The cementites were isolated electrolytic-
ally. The proportions of the alloying elements in the carbide
residues were determined chemically and the amounts dissolved in a
Card 1/2

Curie points of cementite ...

S/279/63/000/001/011/023
E075/E452

given carbide were determined from changes in volume of the elementary lattice or from the spacing. The effect of temperature on the magnetization of carbide powder was determined with a magnetic balance in fields far removed from saturation. It was found that the Curie point of the cementite was not changed by alloying the steel with nickel, niobium or vanadium. Alloying the steel with tungsten somewhat lowered the Curie point temperature and alloying the steel with molybdenum reduced it still more. Manganese, which dissolves in cementite in large quantities, caused a very marked decrease in the Curie point temperature. There are 1 figure and 2 tables.

SUBMITTED: April 24, 1962

Card 2/2

MOROZOV, A.N., doktor tekhn.nauk; LISNYAK, S.S., kand.tekhn.nauk;
BELIKOV, A.M.

Changes in the composition and structure of chromium ores
during their heating and reducing process. Stal' 23 no.2:137-139
F '63. (MIRA 16:2)

1. Chelyabinskiy nauchno-issledovatel'skiy institut
metallurgii.

(Chromium ores)
(Iron-chromium alloys—Metallurgy)

MOLOTILOV, B.V.; KOCHNOV, V.Ye.; BELIKOV, A.M.; GERSHMAN, R.B.

Methods of revealing the substructure in electrical steel. Stal'
23 no.3:251-252 Mr '63. (MIRA 16:5)

1. Tsentral'nyy nauchno-issledovatel'skiy institut chernoy
metallurgii i Chelyabinskiy nauchno-issledovatel'skiy institut
metallurgii.

(Iron-silicon alloys--Pickling)

GOL'DSHEYN, Ya.Ye. (Chelyabinsk); CHARUSHNIKOVA, G.A. (Chelyabinsk);
BELIKOV, A.M. (Chelyabinsk)

Characteristics of phase transformations, structure, and properties
of manganese steel. Izv. AN SSSR. Otd. tekhn. nauk. Met. i gor. delo
no.4:105-111 J1-Ag '63. (MIRA 16:10)

KOCHNOV, V.Ye.; GERSHMAN, R.B.; BELIKOV, A.M.

Methods of revealing the substructure of metals. Fiz. met. i metalloved. 16 no.1:152-155 J1 '63; (MIRA 16:9)

1. Chelyabinskiy nauchno-issledovatel'skiy institut metallurgii.
(Metallography) (Metals—Pickling)

FEDORENKO, N.V. (Chelyabinsk); KOLTSANOV, F.F. (Chelyabinsk); BAJBEV, A.M.
(Chelyabinsk); MORCEV, A.N. (Chelyabinsk)

Magnetic treatment of chromite ores with preliminary roasting.
Izv. AN SSSR Met. i gor. delo no.3:182-188 Ny-Ja'61
(1961)

I 62945-65 EWT(m)/EWP(w)/EPP(c)/EWA(d)/T/EWP(t)/EWP(z)/EPP(b)/EWA(c)

IJP(c) JD

ACCESSION NR: AR5019144

UR/0137/65/000/007/1059/1059

SOURCE: Ref. zh. Metallurgiya, Abs. 71378

AUTHOR: Gol'dshteyn, Ya. Ye.; Charushnikova, G. A.; Belikov, A. M.;
Verbovetskaya, D. Ye.

TITLE: Properties and special characteristics of phase transitions of high manganese steels

CITED SOURCE: Sb. Teoriya i praktika metallurgii. Vyp. 7. Chelyabinsk, 1964, 189-199

TOPIC TAGS: manganese steel, phase transition, brittleness, solid mechanical property, nitrogen, nitride, manganese containing alloy, molybdenum containing alloy, tungsten containing alloy

TRANSLATION: Determinations were made of the mechanical properties and the tendency toward cold brittleness of steels containing (in %) 0.06-0.11 carbon, 6.84-8.89, residual aluminum up to 0.13 or residual titanium up to 0.2. Investigations were also made by microscopic, X-ray structural, dilatometric, and durometric methods. With the composition adopted, a satisfactory combination of

Card 1/2

1. 62045-65
ACCESSION NR: AR5019144

3

properties ($\sigma_s \geq 60 \text{ kg/mm}^2$, $a_{k-40} 9-12 \text{ kgm/cm}^2$) is ensured by a small grain size and a two phase structure, consisting of a thin mixture of ferrite and austenite, resistant at very low temperatures. A similar structure appears on heating up to 600-625C steels which have been previously hardened or normalized. The harmful effect of manganese on the position of the threshold of cold brittleness is due not only to the manganese itself, but also to the nitrogen introduced into the steel with the ferromanganese or the metallic manganese. It is necessary to neutralize the harmful effect of nitrogen dissolved in the steel by bonding it in stable nitrides and carbonitrides (residual aluminum or residual titanium 0.05-0.07%). Subsequent alloying with 6-9% manganese, molybdenum (up to 0.5%) or tungsten (up to 1%) aid in a further lowering of the threshold of cold brittleness ($a_{k-40} 17-20 \text{ kgm/cm}^2$). Orig. art. has: 7 literature titles. I. Tulupova

SUB CODE: MM

ENCL: 00

Card 2/2

I. 23026-66 EWT(l)/EWT(m)/I/EMP(t) IJP(c) JD/HM/GG
ACC NR: AP6009662 SOURCE CODE: UR/0181/66/008/003/0792/0796

AUTHORS: Ammer, S. A.; Belikov, A. M.; Kosilov, A. T.; Postnikov, V. S. 53

ORG: Voronezh Polytechnic Institute (Voronezhskiy politekhnicheskii institut)

TITLE: Features of the structure of copper-iron and copper-nickel filamentary crystals 27 27 27

SOURCE: Fizika tverdogo tela, v. 8, no. 3, 1966, 792-796

TOPIC TAGS: fiber crystal, copper, hardness, crystal structure, x ray study, metallographic examination, single crystal, metal whisker

ABSTRACT: The main purpose of the investigation was to determine the reasons for the observed large microhardness of the transition layer of copper-iron whiskers, and to obtain other data on the fine structure of such whiskers. The whiskers were grown from mixtures of chloride salts of the corresponding metals in a hydrogen atmosphere by the method of T. S. Ke (Scientia sinica v. 10, 301, 1961). The 27 2

Card 1/2

L 23026-66

ACC NR: AP6009662

grown whiskers had a complicated ¹⁸structure, 2 consisting of a single-crystal core-rod surrounded by a polycrystalline envelope, which was thicker at the base of the whisker and narrower at its tip. Some whisker tips had no envelope at all. X-ray structural analysis and metallography were used to investigate the structure. At envelope thickness up to 50 μ , the Debye rings of the x-ray rotation patterns showed a clearly pronounced texture. Regardless of the orientation of the central copper rod, the iron crystals of the envelope glowed on it in accordance with the principle of structural and dimensional correspondence. The copper-nickel whiskers were solid-solution single crystals containing up to 7% nickel in the copper. The concentration in the nickel was higher in the surface layer of the whiskers than in the deeper ones. This structure is related to the growth conditions and also determines some of the whisker properties. It is concluded that the differences between whiskers and ordinary single crystals are due precisely to the differences in the growth conditions. Orig. art. has: 2 figures and 1 table.

SUB CODE: 20/ SUBM DATE: 24Jul65/ ORIG REF: 005/ OTH REF: 006

Card

2/2 *LC*

L 36109-66 EWT(m)/EWP(w)/T/EWP(t)/ETI IJP(c) JD
ACC NR: AP6017309 (A, N) SOURCE CODE: UR/0126/66/021/003/0770/0773

AUTHORS: Postnikov, V. S.; Ammer, S. A.; Kosilov, A. T.; Belikov, A. M. 40

ORG: Voronezh Polytechnic Institute (Voronozhskiy polytekhicheskiy institut) B

TITLE: Relaxation properties of copper-iron thread-like crystals 18

SOURCE: Fizika metallov i metallovedeniye, v. 21, no. 5, 1966, 770-773

TOPIC TAGS: copper containing alloy, iron containing alloy, metal crystal, metal whisker, copper whisker

ABSTRACT: The inner friction, shear modulus, electrical resistance, and crystal structure of copper-iron crystal whiskers were studied. The whiskers were obtained after the method of T. S. Ke and Y. K. Wan (Scientia Sinica, 1961, 10, 3, 301). The experimental results are shown graphically (see Fig. 1). The curve of inner friction vs temperature exhibited a peak in the region of 400--500C. It is concluded that the iron-copper whiskers represent a supersaturated solid solution. The energy of activation for the decomposition of the supersaturated solution as determined by the method of V. S. Postnikov (DAN SSSR, 1953, 91, 79) was 30 kcal/mole.

Card 1/2

UDC: 539.292;538.539.67

L 36109-66

ACC NR: AP6017309

5

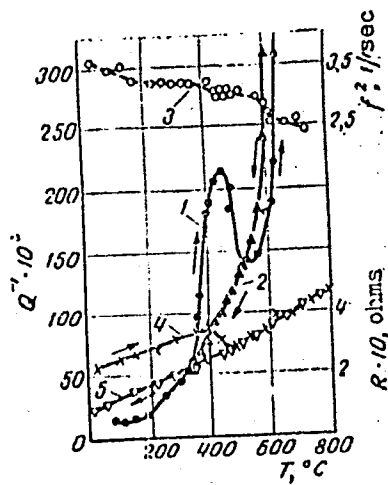


Fig. 1. Temperature dependence of inner friction Q^{-1} , shear modulus G , and electrical resistance R of copper-iron whiskers: 1 - Q^{-1} for slow rate of heating of specimen; 2 - the same for slow cooling; 3 - G for heating; 4 - R for heating; 5 - the same for cooling at a rate of 2.5 degrees/min.

Orig. art. has: 4 figures.

SUB CODE: 11/20/

SUBM DATE: 04May65/

ORIG REF: 007/

OTH REF: 004

LS

Card 2/2

ACC NR: AP7003761

SOURCE CODE: UR/0126/67/023/001/0173/0176

AUTHOR: Postnikov, V. S.; Belikov, A. M.; Zolutukhin, I. V.

ORG: Voronezh Polytechnic Institute (Voronezhskiy politekhnicheskiy institut)

TITLE: Effect of cyclic heating and cooling on the fragmental structure of monocrystals of aluminum and cadmium

SOURCE: Fizika metallov i metallovedeniye, v. 23, no. 1, 1967, 173-176

TOPIC TAGS: x ray diffraction analysis, cadmium, aluminum, heating, structure cooling, crystal structure analysis / URS-50IM diffractometer

ABSTRACT: The article presents some findings on the effect of cyclic heat treatment (CHT) on the fragmental structure (angle of random orientation, size and mutual orientation of fragments) of monocrystals of 99.99% pure Al and Cd. The maximum temperatures of the cycle were 260 and 600°C and the minimum, 100 and 150°C, for Cd and Al, respectively. Fragmental structure was examined by the method of two-crystal x-ray spectrometry with the aid of a modified URS-50IM diffractometer. In the Al monocrystals the plane of the section coincided with the plane (111) and the axis of the specimen coincided with the direction (110). In the Cd

Card 1/3

UDC: 548.4

ACC NR: AP7005761

monocrystals the plane of the section coincided with the plane $(\bar{1}100)$ and the axis of the specimen was parallel to the direction $(11\bar{2}0)$. The increase in fragmentation and changes in the orientation of individual fragments as a result of CHT were determined by photographing the unbounded (nondiaphragmed) reflected beam following every discrete movement of the film and rotation of the monocrystal through 1° for Cd and $1-2^\circ$ for Al. After this the specimens again were subjected to CHT and again inserted in the holder in their previous position with the aid of a microscope and the beam from the same fragments was photographed. The mean static angles of random orientation of the fragments, which in Al and Cd monocrystals amounted to $20-30^\circ$ and $5-7^\circ$, respectively, were determined as a function of the half-width of the recorded curve of oscillation of the monocrystals. Findings: For Al monocrystals, the maximum angle of random orientation is 18° . After 1000 heating cycles there is still no marked change in fragmental structure; the fragments retain their equiaxial shape and there is no marked change in the angles of their mutual orientation. A completely different picture is observed for Cd monocrystals. Their fragments display a lamellar structure and following CHT they are comminuted and bent. The lamellae lie in the (0001) plane and extend in the direction $(11\bar{2}0)$. This is due to the anisotropy of the coefficient of thermal expansion in hexagonal fragmental monocrystals of Cd due to the random orientation of neighboring fragments, and hence also to the occurrence of considerable stresses which may crush the fragments and alter their orientation during CHT." In conclusion the authors wish to express their gratitude to V. A. Likhachev

Card 2/3

ACC NR: AP7005761

and A. N. Orlov for discussion of this project and valuable comments." Orig. art. has:
2 figures.

SUB CODE: ¹¹ 20/ SUBM DATE: 04May66/ ORIG REF: 005/ OTH REF: 002

Card 3/3

PROCESSES AND PROPERTIES INDEX

117 480 790 090128

9

CR

The use of infrared rays for drying colored bronze enamels. A. N. Belikov. *Vestnik Inzhenera i Tekh.* 1938, 632 3; *Russ. Technical Lit. Paint Colour Varnish & Allied Ind.* 12, 321 (1939).—The best drying conditions for an Al enamel on tinned iron, with infrared rays of $\lambda = 0.8 - 2.5 \mu$, are 750-800° (light source), 70-5° (at object), irradiation time 20-5 min., and 10 min. cooling. Both sides of the metal may be coated by this method.

George Avers

METALLURGICAL LITERATURE CLASSIFICATION

2304 034174

0311111 ONF 151

0311111 ONF

DELIKOV, A. N.

Nov 52

USSR/Metallurgy - Welding, Processes

"Preheating by Radiation in Welding," Engr A. N. Belikov

Avtogen Delo, No 11, pp 25,26

Describes expts using infrared rays to accelerate heating of cylinder before welding. Concludes that preheating for welding may be done by radiating installation, configuration of which corresponds to the shape of piece to be preheated. States that such portable installations are convenient for preheating and safe in handling.

266T52

1. BELIKOV A.N. Eng.

2. USSR (600)

4. Sheet-metal Work

7. Application of infrared rays in stamping various products from magnesium-alloy sheet, Vest.mash. 33 no.1, 1953.

9. Monthly List of Russian Accessions, Library of Congress, April 1953, unclass.

SOV/123-59-15-59901

Translation from: Referativnyy zhurnal. Mashinostroyeniye, 1959, Nr 15, p 142 (USSR)

AUTHOR: Belikov, A.N.

TITLE: New Heat-Resisting Enamel EZh-1000

PERIODICAL: Fil. Vses. in-ta nauchn. i tekhn. inform. M., 1958, 9 pages, illustrated,
2 rubles

ABSTRACT: The booklet has not been reviewed.

Card 1/1

18.7400A

69337

S/129/60/000/05/017/023
E091/E235

AUTHOR: Belikov, A. N., Engineer

TITLE: Raising the Refractoriness and Thermal Stability of Parts

PERIODICAL: Metallovedeniye i termicheskaya obrabotka metally
1960, Nr 5, pp 54-55 (USSR)

ABSTRACT: In order to increase the service life of parts working at high temperatures, their surface must be protected by heat resistant enamel coatings. The author has developed and applied the heat resistant enamel EZh-1000, which consists of frit, chromium oxide, Chasov-Yar clay and water. The frit is made by melting a mixture of quartz sand, boric acid, barium carbonate, calcium carbonate, titanium dioxide and zinc oxide, at 1350 to 1400°C. It is ground for 18 to 24 hours in porcelain ball mills with additions of chromium oxide, Chasov-Yar clay and water. The resulting mass is called dross. The parts are cleaned and coated with one layer of dross either by immersion or by spraying. Large parts are sand-blasted, washed with water, dried in a current of air and are then coated with dross (sg 1.6) from a spray gun. This is followed by drying in air at 20 to 25°C

Card 1/3

69337

S/129/60/000/05/017/023
E091/E235

Raising the Refractoriness and Thermal Stability of Parts

for 30 mins, in a cabinet at 60 to 100°C for 20 to 30 mins and annealing at 1030 to 1050°C for 5 minutes, with subsequent cooling in air. The thickness of the enamel layer after annealing is 30 to 60μ. In order to promote formation of an oxide film on the metal surface and thus ensure good adhesion of the enamel, annealing is carried out in an oxidising atmosphere. Enamelling increases the thermal stability of the steel EI417. Tests showed that at 1100 to 1200°C, unprotected specimens withstand 8 to 10 cycles, and those covered with enamel withstand 17 to 22 cycles. Tests at 900°C showed an increase in creep resistance by 14%. Tests for the heat resistance of EI435 alloy specimens under load (6.75 kg/mm²) showed on heating to 900°C and cooling to 200°C that unprotected specimens withstand 490 cycles, whereas enamelled ones withstand 1225 cycles. A special investigation was carried out in order to see whether it is possible to enamel furnace flues and other parts during repair work. Metal of furnace flues in operation and also of specimens having

Card 2/3

69337

S/129/60/000/05/017/023
E091/E235

Raising the Refractoriness and Thermal Stability of Parts

undergone 300 thermal cycles between 890 and 200°C, was sand-blasted and coated with EZh-1000 enamel. As a result, the number of cycles to fracture increased from 330 to 580. EZh-1000 enamel is suitable for coating of parts working at up to 1000°C. There are 2 English references. ✓

Card 3/3

BELIKOV, A. S.
USSR/Chemistry

Card 1/1

Authors : Belikov, A. S.; Ban'kovskiy, A. I.; and Tsarev, M. V.

Title : Alkaloids from Gleditschia Triacanthos L.

Periodical : Zhur. Ob. Khim. 24, Ed. 5, 919.- 922, May 1954

Abstract : A new alkaloid (triacanthine) of the composition $C_8H_{10}N_4$ was obtained from Gleditschia triacanthos L leaves. Other derivatives of triacanthine are : hydrochloride, hydrobromide, nitrate, picrate, picronlonate, sulphate and iodomethylate. The method of separating and purification of the alkaloid is described. Seven referencous.

Institution : All-Union Scientific-Research Institute of Medicinal and Aromatic Herbs

Submitted : November 22, 1953

GORELIK, Semen Samuilovich; RASTORGUYEV, Leonid Nikolayevich;
SKAKOV, Yuriy Aleksandrovich. Prinsipialni uchastiye:
BELIKOV, A.T.; VISHNYAKOV, Ya.D.; LYUTSAU, V.G., red.;
VLADIMIROV, Yu.V., red.izd-va; BEKKER, O.G., tekhn. red.

[X-ray and electron diffraction examination of metals;
practical guide to X-ray analysis, electron diffraction
examination and electron microscopy] Rentgenograficheskii
i elektronograficheskii analiz metallov; prakticheskoe
rukovodstvo po rentgenografii, elektronografii i elektronnoi
mikroskopii. Moskva, Metallurgizdat, 1963. 256 p.

[Supplement; calculation data tables and standard X-ray
diffraction patterns] Prilozheniia; spravochno-raschetnye
tablitsy i tipovye rentgenogrammy. 1963. 92 p.

(MIRA 17:1)

(Metallography) (Electron microscopy)
(Electron diffraction examination)

BEIKOV, B. D.

"Tidal Tides of the Earth According to the Observations in 1923 in Kadarsk (Near Stalingrad)" by the Soviet Scientists, A. E. Gerasimov, A. E. Zhuravskiy, and L. I. Hinkovskiy. (In Russian)

"Tidal Tides of the Earth According to the Observations in 1923 in Kadarsk (Near Stalingrad)" by the Soviet Scientists, A. E. Gerasimov, E. I. Eschikova, and B. M. Krasovskiy. (In Russian)

"Results of Observations of Tidal Tides of the Earth by Means of a Microscopic Apparatus in Kadarsk (Near Stalingrad), 1927" by Soviet Scientists, A. Gerasimov, A. Krasovskiy, and B. Krasovskiy. (In Russian)

"Observations of the Tidal Tides of the Earth by Means of a Photoelectric Apparatus in Kadarsk, July-October 1927" by Soviet Scientists, A. Gerasimov, P. Ivanov, and S. Krasovskiy. (In Russian)

"Tidal Variations of the Earth According to Soviet Scientists, E. I. Eschikova, B. M. Krasovskiy, D. I. Krasovskiy, M. V. Krasovskiy, and B. I. Krasovskiy. (In Russian)

"Observations of Tidal Tides of the Earth by Means of a Photoelectric Apparatus in Kadarsk, July-October 1927" by Soviet Scientists, A. Gerasimov, P. Ivanov, and B. Krasovskiy. (In Russian)

Papers Presented at First Meeting of Permanent Commission on Earth Tides, Trieste, Italy, 6-11 July 1929, under the sponsorship of the Intl Union of Geodesy and Geophysics (IUGG).

2240a

S/O35/61/000/005/038/042
A001/A101

3,1800

AUTHORS: Dobrokhotov, Yu.S., Belikov, B.D., Kramer, M.V., Pertsev, B.P.

TITLE: Observations of tidal variations of gravity acceleration at Pulkovo in 1958

PERIODICAL: Referativnyy zhurnal. Astronomiya i Geodeziya, no. 5, 1961, 33, abstract 5G214 (V sb. "Gravimetr. issledovaniya", no. 1, Moscow, AN SSSR, 1960, 7 - 14, Engl. summary)

TEXT: Observations of gravity tidal variations were conducted at Pulkovo in the basement of the seismic station from April to October, 1958. Two gravimeters of GC-11 type were employed. The tides were recorded first by means of photoelectrical recorders of the firm Bruno Lange and then by means of photorecorders developed in the Institut fiziki Zemli (Institute of Physics of the Earth). Altogether 8 monthly series of continuous observations were made during this period. The harmonic analysis of observations was performed on an electronic computer. The analysis yielded the following mean values of quantities $\delta = 1 - 3/2k + h$ and phase shifts of main waves of the lunar-solar tide: ✓

Card 1/2

22401

Observations of tidal variations ...

S/035/61/000/005/038/042
A001/A101



Wave	Phase shift			
K_1	1.194	± 0.012	+ 2.6	± 0.6
O_1	1.180	± 0.008	+ 1.8	1.1
M_2	1.238	0.017	+ 2.1	0.9
S_2	1.217	0.042	+ 1.6	2.1
N_2	1.222	0.076	+ 6.0	4.0

Positive phase shifts correspond to lag of observed tides relative to theoretical ones.

B. Pertsev

[Abstracter's note: Complete translation]

Card 2/2

22402

S/O35/61/C00/005/039/042
A001/A101

3,1800

AUTHORS: Pariyskiy, N.N., Dobrokhotov, Yu.S., Pertsev, B.P., Kramer, M.V.,
Belikov, B.D., Barsenkov, S.N.

TITLE: Observations of tidal gravity variations at Krasnaya Pakhra

PERIODICAL: Referativnyy zhurnal. Astronomiya i Geodeziya, no. 5, 1961, 33, ab-
stract 5G215 (V sb. "Gravimetr. issledovaniya", no. 1, Moscow; AN
SSSR, 1960, 21 - 26, Engl. summary)

TEXT: Observations were conducted in a special basement near Moscow in 4
km from Krasnaya Pakhra. Six monthly series of observations with four GS-11 gravi-
meters were made at various times from December 1957 to February 1959. The gravi-
meters were calibrated in the vertical gravimetric polygon at the MGU building.
The harmonic analysis of tidal variations was performed on an electronic computer.
The following mean values of quantities being determined $\delta = 1-3/2k + h$ and phase
shifts $\Delta\varphi$ were obtained:
for diurnal waves $\delta = 1.163 \pm 0.016; \Delta\varphi = 10.5 \pm 0.7$
for semidiurnal waves $\delta = 1.180 \pm 0.018; \Delta\varphi = 40.1 \pm 10.0$

[Abstracter's note: Complete translation]

B. Pertsev

Card 1/1

SOV/112-59-3-5472

Translation from: Referativnyy zhurnal. Elektrotehnika, 1959, Nr 3, p 168 (USSR)

AUTHOR: Belikov, B. I.

TITLE: Optimum Conditions for Comparative Control of Rods by Means of an Alternating Magnetic Field (Optimal'nyye usloviya dlya sravnitel'nogo kontrolya prutikov s pomoshch'yu peremennogo magnitnogo polya)

PERIODICAL: Dokl. 7-y Nauchn. konferentsii, posvyashch. 40-letiyu Velikoy Oktyabr'skoy sots. revolyutsii, Nr 2, Tomsk, Tomskiy un-t, 1957, p 111

ABSTRACT: Main points of a report delivered at the 7th Scientific Conference, Tomsk University, are set forth. Considerations are given for selecting the optimum frequency of the magnetizing field to be used for control of cylindrical rods which are magnetized axially.

Card 1/1

BELIKOV, B.I.; SAPOZHNIKOV, A.B.

Effect of the frequency of the magnetizing field on the shape
of the dynamic magnetic loop for a plate. Izv.vys.ucheb.zav.;
fiz. no.5:94-100 '61. (MIRA 14:10)

1. Barnaul'skiy pedagogicheskiy institut i Sibirskiy fiziko-tekhnicheskoy institut pri Tomskom gosudarstvennom universitete imeni V.V.Kuybysheva.
(Hysteresis) (Magnetic fields)

BELIKOV, B.I.

Optimum conditions in electromagnetic analysis. Izv. vyz. ucheb.
zav.; fiz. 8 no.3:134-143 '66. (MIRA 18:9)

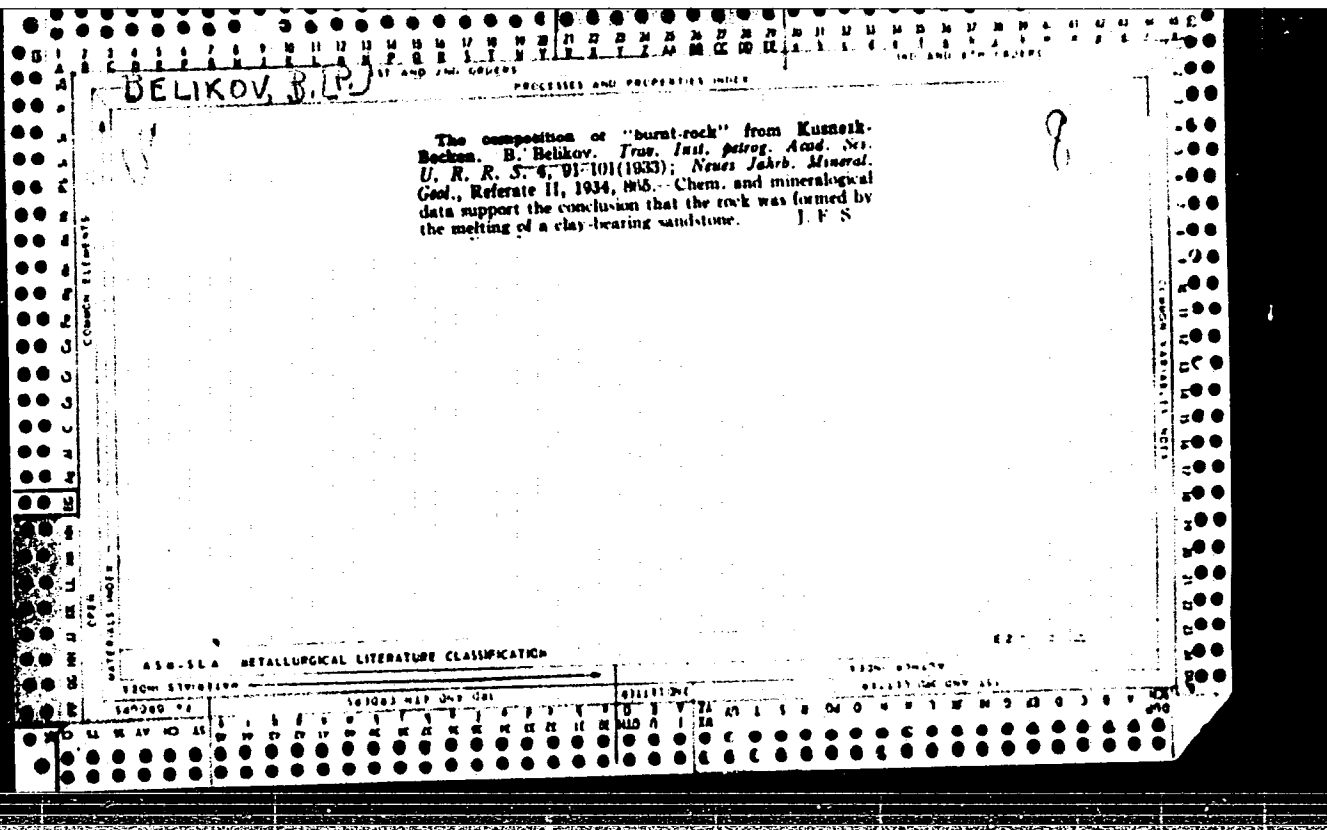
1. Barnaul'skiy pedagogicheskiy institut.

BELKOV, B.P.

Oligoclase from the Bolschai Medvedok Peninsula
 B. Belkov. *Trav. Mus. Geol. Acad. Sci. U. S. S. R.* 12, 5
 97-103 (1932); *Neues Jahrb. Mineral. Geol. Referate II.*
 308 (1937).—Two analyses are given. J. F. Schairer

ASB SLA METALLURGICAL LITERATURE CLASSIFICATION

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	00
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BELIKOV, B.P.

Geological petrographic and physicommechanical investigation of Ullu-Kansk granite (northern Caucasus). Trudy Inst. Geol. Nauk No.89, Petrograf. Ser. No.28, 20-61 '48.
(CA 47 no.22:12142 '53)

BELIKOV, B.P.; ZALESSKIY, B.V., otvetstvennyy redaktor.

[Method of studying tectonic fissures in deposits of building and facing stone] O metode izucheniia treshchinnoi tektoniki mestorozhdenii stroitel'nogo i oblitsivochnogo kamnia. Moskva, Izd-vo Akademii nauk SSSR, 1953. 36 p.

(MLRA 7:4)

(Building stones)

ZALESSKIY, B.V.; BELIKOV, B.P.

Petrographic and mechanical characteristics of granites of the
U.S.S.R. (In: Akademiia nauk SSSR. Voprosy petrografii i minera-
logii. Moskva, 1953. Vol. 2, p.456-476) (MLRA 7:4)
(Granite)

BELIKOV, B. P.

262T42

USSR/Geology - Obituary

Jul/Aug 53

"Academician Dmitriy Stepanovich Belyankin (Obitu-
ary)," G. D. Afanas'yev, B. P. Belikov, O. A.
Vorob'yeva, B. V. Zalesskiy, V. V. Lapin, V. P.
Petrov

Iz Ak Nauk SSSR, Ser Geol, No 4, pp 5-12

Announce demise of D. S. Belyankin (23 Aug 1876-
20 Jun 1953), prominent geologist and petrographer
of USSR.

6

262T42

AFANAS'YEV, G.D.; AFANAS'YEV, L.M.; BELIKOV, B.P.; KOPTEV-DVORNIKOV, V.S.; MIKHAYLOV, N.A.; MONICH, V.K.; FAVORSKAYA, M.A.; prinalni uchastiye: DISTANOVA, A.N.; YELISEYEVA, O.P.; MARFUNIN, A.S.; YUNAKOVSKAYA, Yu.V.; USTIYEV, Ye.K., doktor geol.-min. nauk, otv. red.; NEMANOVA, G.F., red. izd-va; BYKOVA, V.V., tekhn. red.

[Principles of the geological mapping of intrusive and extrusive formations as exemplified by petrographic studies in Kazakhstan, Transbaikalia, the Northern Caucasus, and Maritime Province] Printsipy geologicheskogo kartirovaniya intruzivnykh i effuzivnykh formatsii na primere petrograficheskikh issledovaniy Severnogo Kavkaza, Kazakhstana, Zabaikal'ia i Primor'ia. Moskva, Gos.nauchno-tekhn. izd-vo lit-ry po geol.i okhrane nedr, 1960. 341 p. (MIRA 14:5)

1. Akademiya nauk SSSR. Institut geologii rudnykh mestorozhdeniy, petrografii, mineralogii i geokhimi. 2. Sotrudnik Instituta geologicheskikh nauk AN Kaz. SSR (for Monich). 3. Sotrudnik Vsesoyuznogo geologicheskogo instituta (for Mikhaylov) 4. Sotrudniki Moskovskogo gosudarstvennogo universiteta (for Yunkovskaya, Distanova)

(Rocks, Igneous)

BELIKOV, B.P.

Strength and elastic properties of rocks. Trudy IGEM no.43:47-110
'61. (MIRA 14:10)
(Rocks--Testing)

BELIKOV, B.P.

Elastic properties of rocks. Izv.AN SSSR, Ser.geol. 26 no.11:
34-41 N '61. (MIRA 14:10)

1. Institut geologii rudnykh mestorozhdeniy, petrografii, mineralo-
gii i geokhimii AN SSSR, Moskva.
(Rocks--Testing)

HELKOV, B.P.

Elastic properties of rocks. *Studia geophys* 6 no.1:75-85 '62.

1. Institute of Geology of Ore Deposits, Mineralogy, Petrography
and Geochemistry, Academy of Sciences USSR, Moscow 17, Staromonetny
35.

ALEKSANDROV, K.S.; RYZHOVA, T.V.; BELIKOV, B.P.

Elastic properties of pyroxenes. Kristallografiia 8 no.5:738-741
S-O '63. (MIRA 16:10)

1. Institut fiziki Sibirskogo otdeleniya AN SSSR.