a certain intensification of the background or very washed-out maxima were observed at those places where, after tempering, weak washed-out superstructure maxima occur. The results obtained make it possible to draw the following conclusions: In the investigated Ni-Cr-alloys of 28 and 35 gram-atomic percentage of Cr, sub-microscopic domains with an ordered rhombic Ni_2Cr-structure are formed during tempering, which has several possible orientations with respect to the original solid solution. After quenching, which was carried out beginning from a high temperature (of more than 800°), there is only one near order (of the type of Ni_2Cr) in the arrangement of the atoms of the two sorts. Thus, the production of the K-state in the Ni-Cr-alloys is to be correlated with the formation of submicro-inhomogeneities in them as well as with the occurrence of an order of the type Pt_2Mo in the reciprocal arrangement of atoms. There are 4

On the Atomic Structure of the Solid Solutions of Chromium in Nickel SOV/20-122-5-16/56

figures, 1 table, and 17 references, 6 of which are Soviet.

ASSOCIATION: Institut metallovedeniya i fiziki metallov Tsentral'nogo nauchno-issledovatel'skogo instituta chernoy metallurgii (Institute of **Metallography and Metal Physics of the Central Scientific Research Institute for Ferrous Metallurgy**)

PRESENTED: May 25, 1958, by G.V.Kurdyumov, Academician

SUBMITTED: May 17, 1958

Card 4/4

AUTHOR: Bagaryatskiy, Yu.A. SOV/70-4-3-9/32

TITLE: X-ray Studies of Ageing in Aluminium Alloys. Part VII. On the Structure of the Guinier-Preston Zones in Alloys of Aluminium and Copper

PERIODICAL: Kristallografiya, 1959, Vol 4, Nr 3, pp 341-347 + 1 plate (USSR)

ABSTRACT: The intensity of the diffuse scattering along the directions (0,0,x) and (1,1,x) of reciprocal space for the model of the aged Al-Cu alloy proposed by Toman (Ref 9) has been calculated. A deviation between the values calculated here and those calculated by Toman (for 00x with $x > 2.5$) is found due to approximations in Toman's formula. Calculations have been compared with intensities measured experimentally for Al/Cu with 4% Cu after natural ageing. The observed intensities differ from those expected on the Toman model. The Guinier-Preston zone structure can probably be further refined by using ionisation methods of measuring the intensities of the diffuse scattering and increasing the number of terms used in the calculation.

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SOV/70-4-3-9/32

X-ray Studies of Ageing in Aluminium Alloys. Part VII. On the Structure of the Guinier-Preston Zones in Alloys of Aluminium and Copper

The zero and first planes of the reciprocal lattice of an Al/Cu (4% Cu) single crystal were recorded (after ageing for 3 months) with a retigraph (KFOR) which gives photographs most suitable for photometry. Monochromatised Mo Kα radiation at 30-35 kV was used. Intensifying screens were used and the intensity-blackening curve had to be obtained by special calibration. LP but not absorption corrections were applied and corrections for beam divergence were also made. Diagrams of the observed and calculated intensity distributions are reproduced as are plates of the original photographs.
There are 6 figures, 1 table and 17 references, 6 of which are Soviet, 2 French, 5 English, 1 German and 3 international.

Card 2/3

SOV/70-4-3-9/32

X-ray Studies of Ageing in Aluminium Alloys. Part VII. On the Structure of the Guinier-Preston Zones in Alloys of Aluminium and Copper

ASSOCIATION: Institut metallovedeniya i fiziki metallov, TsNIIChERMET (Institute of Metallurgy and Metal Physics, TsNIIChERMET)

SUBMITTED: November 15, 1958

Card 3/3

24.7100

77119
SOV/70-4-6-20/31

AUTHOR: Bagaryatskiy, Yu. A.

TITLE: Concerning the Methods of Calculation Using Diffuse Scattering Photographs of Hexagonal Crystals. Brief Communication

PERIODICAL: Kristallografiya, 1959, Vol 4, Nr 6, pp 919-921 (USSR)

ABSTRACT: An equation derived by the author in 1955 (Fiz. metallov i metallovedeniye, 1, 2, 330, 1955) for the calculation of cubic crystals is

$$H_a(x_1, x_2, x_3) = \frac{a}{\lambda}\left\{\frac{x}{Q}\mathbf{i} + \frac{y}{Q}[s_0\mathbf{i}] + \left(\frac{D}{Q} - 1\right)s_0\right\}; \quad (1)$$

where H_a stands for a reciprocal lattice in which vector coordinates K_1, K_2, K_3 are expressed as fractions of a^*; x,y are film coordinates of diffraction spots; a is the identity period in direct lattice;

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i is a unit vector parallel to axis OX of the X-ray diffraction photograph; s_o is a unit vector parallel to incident beam; D is the crystal-to-film distance in mm; and $Q = \sqrt{x^2 + y^2 + D^2}$. The same equation can be employed for the computation of reciprocal lattice coordinates of any scattering point of a hexagonal structure, if relationships illustrated in Fig. 1 and the resulting substitutions are taken into account. The quantitative relationships are: $a_h = a_c\sqrt{2}$; $c_h = a_c k\sqrt{3}$; $k = \sqrt{\frac{2}{3}}\left(\frac{c}{a}\right)_h$ (subscripts h and c stand for hexagonal and cubic respectively);

$$\begin{aligned} x_{1h} &= x_{1c} - x_{2c} \\ x_{2h} &= x_{2c} - x_3 \\ x_{3h} &= -k(x_1 + x_{2c} + x_1) \end{aligned} \qquad (6)$$

Concerning the Methods of Calculation Using Diffuse Scattering Photographs of Hexagonal Crystals. Brief Communication

77119
SOV/70-4-6-20/31

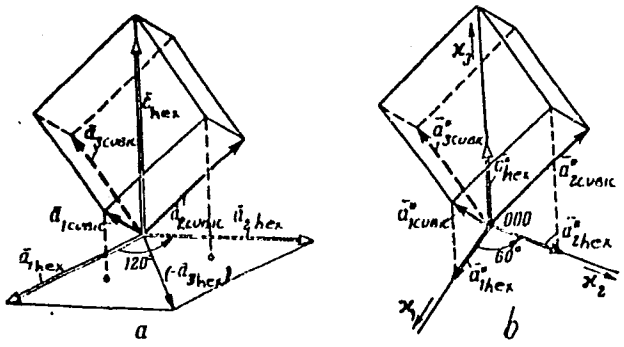

Fig. 1. Relationship between hexagonal and imaginary cubic coordinate axes. a - in direct lattice, b - in the reciprocal lattice.

$$S_0 = (u' + kw')\,a_{1c} + (-u' + v' + kx')\,a_{2c} + (-v' + kw')\,a_{3c} \qquad (8)$$

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where S_0 is a vector parallel to s_0; u' v' w' are angular coordinates of the incident beam in a hexagonal crystal. Vector i in hexagonal coordinates can similarly be expressed in terms of i (i_1, i_2, i_3) of cubic coordinates using transformation determinants

$$\begin{vmatrix} s_{02} & s_{03} \\ i_2 & i_3 \end{vmatrix}, \quad \begin{vmatrix} s_{03} & s_{01} \\ i_3 & i_1 \end{vmatrix} \quad \begin{vmatrix} s_{01} & s_{02} \\ i_1 & i_2 \end{vmatrix}. \qquad (10)$$

Thus, having film coordinates x,y of a diffraction spot and using the above quantitative relationships one can compute the reciprocal lattice vector coordinates, and identity periods a and c and the other values involved. There is 1 figure; and 3 references, 1 Soviet, 1 U.S., 1 U.K. The U.S. and U.K. references are: M. J. Buerger, X-Ray Crystallography, New York, 1942; A. Taylor, An Introduction to X-Ray Metallography, London, 1945.

Concerning the Methods of Calculation Using Diffuse Scattering Photographs of Hexagonal Crystals. Brief Communication

77119
SOV/70-4-6-20/31

ASSOCIATION: Institute of Physical Metallurgy and Metal Physics at the Central Scientific Research Institute of Ferrous Metallurgy (Institut metallovedeniya i fiziki metallov TsNIIChM)

SUBMITTED: June 23, 1959

Card 5/5

18.7000

77129
SOV/70-4-6-30/31

AUTHORS: Bagaryatskiy, Yu. A., Kolontsova, Ye. V.

TITLE: A Method of Accelerated Growth of Single Crystals of Aluminum and of Its Alloys by Recrystallization. Brief Communications

PERIODICAL: Kristallografiya, 1959, Vol 4, Nr 6, pp 935-936 (USSR)

ABSTRACT: Having slightly altered the known method of single-crystal growth from plastically deformed aluminum or its alloys (M. O. Kornfeld, Phys. ZS der Sov. Un., 4, 668, 1933), the authors produced the desired crystals within a day and without complicated thermostatic devices. After numerous trial experiments they found that rods of technically pure aluminum (99.5% Al) and of Al alloys containing 4% Cu, or 3% Cu + 1% Mg, or 10% Zn turn into large crystals after being plastically deformed to a certain critical degree, immediately annealed below the temperature of recrystallization, and relaxed for several hours. They produced 0.8- to 1-mm wire by cold drawing polycrystalline specimens

of 3- to 4-mm thick rods. After the thermal treatment and relaxation the single crystals had a length up to 150 mm in technically pure Al wire; 30 to 40 mm in Al + Cu; 10 to 15 mm in Al + Cu + Mg; and 3 to 4 mm in Al + Zn. Additional annealing at 600° C did not make the crystals any longer but lowered their quality. The method failed to produce large single crystals of highly pure aluminum (99.99% Al). They were produced by placing the preliminarily annealed, stretched (2 to 3%) polycrystalline specimens into a cold furnace, raising the temperature to 450° C, annealing at this temperature for 5 to 10 hr, raising the temperature to 600° C, keeping the temperature of recrystallization for 4 to 6 hr, and cooling the specimens slowly with the furnace. The resulting single crystals were 60 to 70 mm long. The long single crystals can easily bend under their own weight and their structure be damaged. The crystal boundaries in Al wire are easily exposed by etching with HF, HCl, H_2O solution and in Al + Zn

A Method of Accelerated Growth of Single Crystals of Aluminum and of Its Alloys by Recrystallization. Brief Communications

77129
SOV/70-4-6-30/31

with HF, HNO_3, and glycerin. There is 1 table; and 8 Soviet references.

ASSOCIATION: Moscow State University imeni M. V. Lomonosov (Moskovskiy gosudarstvennyy universitet imeni M. V. Lomonosova)

SUBMITTED: January 9, 1959

Card 3/3

BAGARYATSKIY, Yu.A.; TYAPKIN, Yu.D.

More on X-ray diagrams with satellites. Kristallografiia 5 no.4: 535-539 Jl-Ag '60. (MIRA 13:9)

1. Institut metallovedeniya i fiziki metallov TSentral'nogo nauchno-issledovatel'skogo institut chernoy metallurgii.
(Solutions, Solid—Spectra) (Alloys—Spectra)

87805

18.7500 1418, 1413, 1145

S/070/60/005/006/003/009
E021/E306

AUTHORS: Bagaryatskiy, Yu.A. and Tyapkin, Yu.D.

TITLE: Additional Structural Data on the Decomposition of Supersaturated Solid Solutions of Titanium in Nickel and Nichrome

PERIODICAL: Kristallografiya, 1960, Vol. 5, No. 6, pp. 882 - 890 + 1 plate

TEXT: A detailed study has been carried out of the crystal structure of nickel-titanium and nickel-chromium-titanium alloys during the decomposition of the supersaturated solid solutions from the initial stage when the titanium distribution is nonuniform, to the final stage when a hexagonal phase is precipitated. The binary alloys containing 11.8 and 14.1 at.% titanium and the ternary alloys containing 16.5 at.% chromium and 8.5 at.% titanium were investigated by ageing at 700 and 800 °C for various times. In the initial stage of decomposition, microregions rich and poor in titanium were formed. Both the titanium-rich and titanium-poor regions

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87805

S/070/60/005/006/003/009
E021/E306

Additional Structural Data on the Decomposition of Super-saturated Solid Solutions of Titanium in Nickel and Nichrome

could deviate from cubic symmetry and could become tetragonal. In the binary alloy containing 14 at.% titanium and in the ternary alloy, the titanium-poor regions became tetragonal with a c/a ratio of 0.999 ± 0.001. In the binary alloy containing 12% titanium, the titanium-rich regions were tetragonal with c/a = 1.003 ± 0.001. Thus, the tetragonal structure was not caused by metastable Ni_3Ti compound, as has been proposed (Refs. 3, 7). When the precipitate of the hexagonal η-phase Ni_3Ti first appears, the regions of both types became tetragonal with the above axial ratios. The c-axes of all the regions were in the same direction so that the initial monocrystal as a whole appeared to be tetragonal. As precipitation of the hexagonal phase occurred, recrystallisation of the regions poor in titanium also occurred, which resulted in part or the whole of the monocrystal becoming

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S/070/60/005/006/003/009
E021/E306

Additional Structural Data on the Decomposition of Supersaturated Solid Solutions of Titanium in Nickel and Nichrome

polycrystalline. After several thousand hours the binary alloy with 14% titanium remained monocrystalline but the ternary alloy did not. The transformation to a polycrystal did not occur for the ternary alloy at 850 °C.
Recrystallisation was explained by stresses arising in the monocrystal.
Acknowledgments are made to B.A. Mel'nikov for his assistance in the experimental part of this work.
There are 5 figures, 1 table and 20 references: 10 Soviet and 10 non-Soviet.

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67805
S/070/60/005/006/003/009
E021/E306

Additional Structural Data on the Decomposition of Super-saturated Solid Solutions of Titanium in Nickel and Nichrome

ASSOCIATION: Institut metallovedeniya i fiziki metallov TsNIIChM (Institute of Metallurgy and Physics of Metals of TsNIIChM)

SUBMITTED: April 19, 1960

Card 4/4

S/020/60/132/02/26/067
B011/B002

18.9200
18.1250

AUTHORS: Bagaryatskiy, Yu. A., Ivanovskaya, L. Ye.

TITLE: The Shape of the Phase Diagram of Ni - NiAl - Mo Alloys

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 132, No. 2, pp. 339-342

TEXT: The authors mention that hitherto not even a ternary phase diagram of the alloys Ni - Al - Mo has been set up, not to speak of nickel alloys containing Al and Mo with even more components. The authors obtained the alloys by melting pure substances in a high-frequency furnace in an argon atmosphere. For 100 hours the alloys were homogenized in the vacuum furnace at 1200°. Those richest in aluminum were again homogenized for another 2 hours at 1500°. In accordance with the intended investigation of the alloys by means of 3 isothermal cross sections at 1200°, 1000° and 800°, the three series of samples were thermally treated as follows: 1) for 100 hours at 1200° ⟶ hardening; 2) at 1200° for 100 hours and another 100 hours at 1000° ⟶ hardening; 3) for 100 hours at 1200° and another 100 hours at 1000° plus 100 hours at 800° ⟶ hardening. The alloys obtained were microstructurally and radiographically examined. Table 1 gives the results obtained at 1200°. The corresponding isothermal cross section and the borderlines

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of the γ-range at 800° and 1000° are shown in Fig. 1. The data on the binary systems Ni - Al and Ni - Mo (Refs. 7, 10, 11) were also used in the formulation. They are in good agreement with the authors' results on the binary alloys a - zh at 1200°. In the alloy zh, the δ-phase (NiMo) predominates in all three temperatures (Fig. 2a). Table 2 gives the angle of reflection of the δ-phase determined by the authors (by K_αCu radiation). The relative intensity of the lines is also given. The δ-phase hardly dissolves Al. Alloy No. 29 (only containing 2 1/2 atom % of Al) thus already consists of γ- and α-phases (solid solution on the basis of Mo) (Fig. 2b). The same systems of lines are visible in the radiograph of alloy No. 15. Hence the conclusion contradictory to Ref. 3, that neither the existence of Ni_3Al + NiMo(γ' + δ) within the two-phase state, nor the existence of the solid solution Ni + Ni_3Al + NiMo(γ + γ' + δ) is possible. Table 1 shows that the results of the radiographic and microstructural investigations on the whole are in good agreement, provided the quantities of any phase are not too small for being radiographically proven. Exceptions: alloys No. 22 and 23 in which the β-phase cannot be determined radiographically. For unknown reasons it was impossible to determine the microstructure of alloys No. 23 and 24. Phases γ and γ' can only be distinguished in micro-photographs (Figs. 3b and 3g), while their radiographs gave identical pictures. There are

The Shape of the Phase Diagram of Ni - NiAl - Mo Alloys

S/020/60/132/02/26/067
B011/B002

3 figures, 2 tables, and 14 references, 6 of which are Soviet.

ASSOCIATION: Institut metallovedeniya i fiziki metallov Tsentral'nogo nauchno-issledovatel'skogo instituta chernoy metallurgii (Institute of Metallography and Physics of Metals of the Central Scientific Research Institute of Iron Metallurgy)

PRESENTED: January 6, 1960, by G. V. Kurdyumov, Academician

SUBMITTED: January 4, 1960

4

Card 3/3

ТВАГАРЯЦКИЙ Ю.А.

PHASE I BOOK EXPLOITATION SOV/5525

Bagaryatskiy, Yuriy Aleksandrovich, Doctor of Physics and Mathematics; Yakov Mendelevich Golovchiner; Vera Alekseyevna; Emmanuil Zel'manovich Kaminskiy, Candidate of Physics and Mathematics; Viktor Mikhaylovich Kardonskiy; Vladislava Kazimirovna Kritskaya, Candidate of Physics and Mathematics; Leonid Ivanovich Lysak, Doctor of Technical Sciences; Yuriy Andreyevich Osip'yan; Mark Davydovich Perkas, Candidate of Technical Sciences; Vladimir Moiseyevich Rozenberg, Candidate of Technical Sciences; Naum Isaakovich Sandler, Candidate of Technical Sciences; Nadezhda Trofimovna Travina, Candidate of Physics and Mathematics; and Lev Markovich Utevskiy, Candidate of Technical Sciences.

Rentgenografiya v fizicheskom metallovedenii (Radiography in Physical Metallography) Moscow, Metallurgizdat, 1961. 368 p. 5,200 copies printed.

Sponsoring Agencies: Gosudarstvennyy nauchno-ekonomicheskiy Sovet SSSR. Tsentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii im. I.P. Bardina. Institut metallovedeniya i fiziki metallov.

Ed. (Title page): Yu. A. Bagaryatskiy; Ed. of Publishing House: Ye.N. Berlin; Tech. Ed.: Ye.B. Vaynshteyn.

Card 1/7

18.1250 2208, 1416, 2808
24.7100 (1160, 1142, 1153)

25892
S/070/61/006/004/004/007
E021/E406

AUTHORS: Tyapkin, Yu.D., Bagaryatskiy, Yu.A. and Gavrilova, A.V.

TITLE: Study of the changes in crystal structure of nickel-beryllium alloys in the early stages of ageing

PERIODICAL: Kristallografiya, 1961, Vol.6, No.4, pp.560-567 + 3 plates

TEXT: Single crystals of Ni-Be alloys containing 2.2% Be were quenched from 1100°C and aged at 425 or 500°C. The change in hardness (Rockwell B) with the total soaking time during tempering (in minutes and hours) is shown in Fig.1. The alloys were studied by X-ray analysis to elucidate the changes in structure. In the early stages of ageing (30 min to 2 hours at 425°C) the formation of Guinier-Preston zones considerably enriched in beryllium occurs. They are in a plate-form of 1 to 2 atomic layers thick and parallel to the (100) planes in the matrix. At the same time all the solid solution is less-rich in beryllium and approaches to the equilibrium state. The depleted matrix divides into separate blocks which at first have different orientations one from another. The blocks are elastically distorted. There are cracks with thickness of the order of 20 to 30 Å in the matrix

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Study of the changes in crystal ...

along the (110) planes. At 500°C, the G.P. zones increase in size, regions with structure close to β phase appear and orientated rotation of the blocks occurs around one axis of the [100] type. This rotation reaches 8 to 10° after 32 hours at 500°C. The high hardness values of aged Ni-Be alloys is connected not with elastic distortion in the matrix but, in the main, with the division of the matrix into blocks and with their rotation relative to one another. All the observed changes result from the large difference in atomic volumes of the matrix and the precipitating phase (NiBe) which reaches 20%. There are 10 figures and 22 references: 16 Soviet and 6 non-Soviet. The three references to English language publications read as follows: M.Hansen, K.Anderko, Constitution of Binary Alloys. 290. New York - London, 1958; A.H.Geisler. Phase Transformation in Solids, 454. New York - London, 1951; R.B.Nicholson, G.Thoma, J.Natting. J.Inst.Metals, 87, 12, 429, 1959.

ASSOCIATION: Institut metallovedeniya i fiziki metallov TsNIIChM (Institute of Metals Science and Physics of Metals, TsNIIChM)

BAGARYATSKIY, Yu.A.; TYAPKIN, Yu.D.

Simple device for eliminating the effect of the K_{α_2}-component in reversal X-ray photographs of single crystals. Kristallografiia 6 no.5:774-775 S-O '61. (MIRA 14:10)

1. Institut metallovedeniya i fiziki metallov.
(Radiography) (Crystals--Spectra)

BAGARYATSKIY, Yu.A. (Moskva); NOSOVA, G.I. (Moskva)

Accessory elements on the X-ray pictures of titanium alloys. Izv.AN SSSR. Otd.tekh.nauk. Met.i topl. no.4:186-188 Jl-Ag '62. (MIRA 15:8)

(Titanium alloys--Metallography)

BAGARYATSKIY, Yu.A.; TRAVINA, N.T.

Orientation of phases separating during aging of the alloys nickel-beryllium and copper-beryllium. Kristallografiia 7 no.1:128-133 Ja-F '62. (MIRA 15:2)

1. Institut metallovedeniya i fiziki metallov i TSentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii.
(Nickel-beryllium alloys--Metallurgy)
(Copper-beryllium alloys--Metallurgy)
(Crystallography)

BAGARYATSKIY, Yu.A., doktor fiziko-matematicheskikh nauk

Regularities of the atomic structure mechanism of alloy aging according to data of X-ray investigations. Probl.metalloved.i fiz. met. no.7:177-197 '62. (MIRA 15:5)
(Alloys—Metallography) (Crystal lattices)

S/717/62/000/007/005/010
D207/D302

AUTHOR: Bagaryatskiy, Yu.A., Doctor of Physico-Mathematical Sciences

TITLE: Regularities in the atomic structure mechanism of ageing in alloys according to the data of X-ray diffraction studies

SOURCE: Dnepropetrovsk. Institut metallovedeniya i fiziki metallov. Problemy metallovedeniya i fiziki metallov, no. 7, Moscow, 1962, 177 - 197

TEXT: This is a review article, based on a paper presented at the Vsesoyuznoye nauchno-tekhnicheskoye soveshchaniye po teoreticheskim voprosam metallovedeniya (All-Union Scientific-Technical Conference on Theoretical Problems in Metallography), held in November, 1958, in Moscow. The author discusses critically the published work on the ageing of various alloys, including steels. The X-ray crystallographic and electron micrographic data are considered. The information available suggests a three-stage ageing process: 1) Redistribution of atoms within a solid solution without any change of structure detec-

Card 1/2

table by X-rays; 2) Actual precipitation of a second phase with a different crystal structure; and 3) Increase in size and refinement of the structure of the precipitate. There are 7 figures and 97 references: 55 Soviet-bloc and 42 non-Soviet-bloc. The 4 most recent references to the English-language publications read as follows: E.L. Harmon and A.R. Troiano, J. Metals, 9, no. 10, Fall meeting report, 57, 1957; M. Hansen and H. Anderko, Constitution of Binary Alloys, New York, London, p. 675, 1010, 1958; R.B. Nicholson, G. Thomas, and J. Nutting, J. Inst. Metals, 429, 87, no. 12, 1959; H.M. Otte, Trans. Metal, Soc. of AIME, 218, no. 2, 342, 1960.

S/137/62/000/012/021/085
A006/A101

AUTHORS: Bagaryatskiy, Yu. A., Nosova, G. I., Tagunova, T. V.

TITLE: On the nature of the ω-phase in quenched titanium alloys

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 12, 1962, 32, abstract 12I204 ("Sb. tr. In-t metalloved. i fiz. metallov Tsentr. n.-i. in-ta chernoy metallurgii", 1962, v. 7, 307 - 314)

TEXT: This is a reviewing report submitted to the V. International Congress of Crystallographs (Cambridge, England, August 1960). On the basis of analyzing the results of a great number of studies, the conclusion is drawn that the ω-phase in Ti-alloys should be considered as a martensite phase of a special kind. The characteristic feature in the formation of martensite phases of this kind is the absence of a relief on the section surface. There are 30 references.

P. Novik

[Abstracter's note: Complete translation]

Card 1/1

S/070/62/007/006/008/020
E132/E435

AUTHOR: Bagaryatskiy, Yu.A.

TITLE: The dimensions of the spots in X-ray diffraction photographs from single crystals and their relationship to the sizes and relative disorientation of the blocks and to scatter in the values of the lattice periods

PERIODICAL: Kristallografiya, v.7, no.6, 1962, 886-894

TEXT: A geometrical analysis is made of the spot shape in oscillation and rotation photographs, Laue photographs and diffuse scattering pictures when the following three disturbances to the crystal lattice are present: (a) the effect of small block dimensions (mosaicity) is, if the blocks have dimensions L, to expand the reciprocal lattice spots into spheres of radius $1/L$; (b) disorientation spreads out the reciprocal lattice point over an arc or segment of a sphere of radius H_{hkl}; (c) variation in the lattice period extends the reciprocal lattice points radially so that they extend from λ/d_1 to λ/d_2, where d_1 and d_2 are the limits for the spacing of the particular set of planes. In each case the extent of the diffracting region as the

The dimensions of the spots ...

extended spot sweeps through, or lies in, the Ewald sphere is calculated. The combination of two of these effects is estimated: (a) and (b) are one possibility, (a) and (c) another, (b) and (c) the third. These results have been applied to the case of an alloy TiCr with 7% Cr quenched from 1000°C and tempered at 400°C for 50 hours. This leads to the formation of the α-phase in the initial β-phase. In oscillation photographs the spots are sharp from both phases but in Laue pictures there are streaks. From these it can be calculated that the disorientation of the α-phase is 1 to 1.5° and that the dimensions of the blocks of the β-phase are about 200 to 300 Å. There is no scatter in lattice period. The angular disorientation of the β-phase is about 1°. The above information results from the combination of measurements from the different kinds of photographs. Besides this it is found that the relative orientation of the two phases is

$$(110)\,\beta \parallel (0001)\,\alpha$$

$$(111)\,\beta \parallel (11\bar{2}0)\,\alpha$$

as in pure Ti.

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The dimensions of the spots ... S/070/62/007/006/008/020
E132/E435

There are 8 figures.

ASSOCIATIONS: Institut metallovedeniya i fiziki metallov
(Institute of Science of Metals and Physics of Metals)
Tsentral'nogo nauchno-issledovatel'skogo instituta
chernoy metallurgii im I.P.Bardina
(Central Scientific Research Institute of Ferrous
Metallurgy imeni I.P.Bardin)

SUBMITTED: March 15, 1962

Card 3/3

36599
S/126/62/013/003/013/023
E021/E180

18.1 1281

AUTHORS: Bagaryatskiy, Yu.A., and Nosova, G.I.

TITLE: The $\beta \rightarrow \omega$ transformation in titanium alloys on quenching - a martensitic transformation of a special kind

PERIODICAL: Fizika metallov i metallovedeniye, v.13, no.3, 1962, 415-425

TEXT: The present investigation was carried out on Ti-Cr alloys containing 5-14% Cr. In alloys with 5-8% Cr the ω-phase was formed by quenching from the β-phase. In alloys richer in Cr, it could be formed by super-cooling, for example, to -186 °C. Samples containing 9-11.5% Cr were also compressed to 10, 20 and 50% deformation. No change in phase composition was noted as a result of this deformation. Thus, with a sufficiently high concentration of chromium, the formation of ω-phase would take place only by diffusion of the alloying element. Experiments with alloys containing 5, 6 and 8% Cr were carried out using high rates of cooling (8000-11000 °/sec) on thin-walled

specimens. X-ray photographs showed that, after cooling, the structures of the 5, 6 and 8% Cr alloys were α', β+ω, and β, respectively. Thus, the 6% Cr alloy suffered a transformation in which diffusion played no part. Alloys with 5.5-8% Cr were prepared in the form 1.5-2 mm diameter and 130 mm long wires. The samples consisted of β+ω phases after quenching. Heating was then carried out at rates of 200-700 °/sec by an electrical current. It was shown that the temperature of the beginning of the ω to β transformation was close to 455-460 °C. The transformation ω to β for the alloy containing 5.5% Cr appeared to take place without diffusion occurring.
There are 4 figures and 1 table.

ASSOCIATION: Institut metallovedeniya i fiziki metallov TsNIIChM (Institute of Science of Metals and Physics of Metals, TsNIIChM)

SUBMITTED: May 10, 1961

X

BAGARYATSKIY, Yu.A. (Moskva); NOSOVA, G.I. (Moskva); TRAVINA, N.T. (Moskva)

X-ray investigation of the decomposition of solid solutions in copper-nickel-cobalt alloys. Izv. AN SSSR. Otd. tekh. nauk. Met. i gor. delo no.3:154-161 My-Je '63. (MIRA 16:7)
(Copper-nickel-cobalt alloys--Metallography)

BAGARYATSKIY, Yu.A.

Analysis of Laue's interference function. Kristallografiia 8 no.5:706-710 S-O '63. (MIRA 16:10)

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

S/020/63/148/003/019/037
B108/B180

AUTHORS: Bagaryatskiy, Yu. A., Lukanina, I. G.

TITLE: X-ray diffraction investigation of the initial stage of disintegration of the solid solution an Fe-Ni-Al alloy

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 148, no. 3, 1963, 573-576

TEXT: The superstructure reflections from large single crystals, approximate composition Fe_2NiAl, were studied after homogenizing and quenching and after tempering at 700°C. On quenching spherical zones were formed, which increased in size on tempering. They consisted of a core enriched in atoms of one type and a shell of lesser concentration. In the alloy under examination these cores may be either chiefly Ni and Al atoms (incipient β_2-phase) or chiefly Fe atoms (incipient β-phase). The size of these zones is about 90 - 140 Å after normal quenching, 40 - 65 Å after sudden quenching, increasing to 170 - 290 Å after 1 hr tempering. When the number of zones with NiAl cores grows, the whole alloy disintegrates into regions of not equi-axial shape. It is this which causes the high

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X-ray diffraction investigation of the ... S/020/63/148/003/019/037
B108/B180

coercive force associated with this alloy.

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

PRESENTED: July 18, 1962, by G. V. Kurdyumov, Academician

SUBMITTED: July 17, 1962

Card 2/2

BAGARYATSKIY, Yu.A. [deceased]; LUKANINA, I.G.

Analysis of diffuse scattering of X rays in Fe--Ni--Al alloys. Kristallografiia 9 no.4:477-485 Jl-Ag '64. (MIRA 17:11)

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

L 44311-66 EWT(m)/EWP(w)/T/EWP(t)/ETI IJP(c) JD/JH

ACC NR: AP6019832 (N) SOURCE CODE: UR/0370/66/000/001/0126/0135

AUTHOR: Bagaryatskiy, Yu. A. (Deceased) (Moscow); Nosova, G. I. (Moscow); Travina, N.T. (Moscow)

ORG: none

TITLE: Changes in the structure of Al-Mg and Al-Mg-Zn alloys on aging and their effect on the mechanical properties of the alloys

SOURCE: AN SSSR. Izvestiya. Metally, no. 1, 1966, 126-135

TOPIC TAGS: aluminum base alloy, magnesium, zinc, phase composition, metal aging, tempering

ABSTRACT: Differences in the atomic dimensions of alloy components may markedly influence the mechanism of phase transformations in alloys and particularly the decomposition of supersaturated solid solutions. For this very reason, it is of special interest to study the aging of Al-Mg and Al-Mg-Zn alloys, whose components differ greatly in atomic radii, and in which tempering at 50-400°C may lead to the decomposition of the supersaturated α-solid solution with the formation of the equilibrium phases α and β(Al_3Mg_2) whose crystalline structure has been variously defined as hexagonal and complex-cubic. Regarding Al-Mg alloys

 UDC: 669.017.12

there exist conflicting opinions on the structure of phases segregating in these alloys during their tempering. Thus some investigators believe that the metastable phase β' is the first to form, while others conclude that the equilibrium phase β with a more or less distorted structure segregates already in the early stages of tempering. To clarify this question, the alloy of Al + 9.4% Mg was radiographically examined following its quenching from 440°C and tempering at 150, 218, and 270°C. Findings: the decomposition of the solid solution during tempering at 150°C occurs much more slowly than at 218 and 270°C but the phase segregating in the early stages of tempering at 150°C is the same β-phase as that segregating at higher temperatures. As for the Al-Mg-Zn ternary alloys, by contrast with the Al-Mg binary alloys, they are capable of natural aging. In this connection the authors investigated the effect of different atomic ratios of Mg to Zn (1:1 and 1:2) on the nature of decomposition of the solid solution following both natural and artificial aging, thus establishing that the sequence of structural changes during the aging of the Mg-rich Al-Mg-Zn ternary alloys (Al + 4 wt.% Mg + 5 wt.% Zn) is the same as in Mg-poor alloys of this kind (Al + 2 wt.% Mg + 5 wt.% Zn), but in the Mg-rich alloys these processes occur much more rapidly. In the Al-Mg alloys hardness, ultimate strength and yield point begin to increase during the initial stage of tempering and go through two maxima -- one very early during tempering (within the first 3-10 min) and the other, accompanying the segregation of substantial amounts of the β-phase. In the Al-Mg-Zn alloys these

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ACC NR: AP6019832

mechanical properties also increase during the initial stage of aging; they decrease only after prolonged tempering (more than 250 hr at 150°C), i.e. clearly, following coagulation of particles of the T-phase. Orig. art. has: 8 figures, 3 tables.

SUB CODE: 13, ~~20~~ 11/ SUBM DATE: 08Aug64/ ORIG REF: 003/ OTH REF: 018/

Card 3/3 ULR

KUZ'MICH, A.S., redaktor; GRAFOV, L.Ye., redaktor; SHEVYAKOV, L.D., akademik, redaktor; SUDOPLATOV, A.P., redaktor; BALBACHAN, Ya.I., redaktor; OSTROVSKIY, S.B., redaktor; BARANOV, A.I., redaktor; BAGASHEV, M.K., redaktor; IVANENKO, G.I., redaktor; SOSNOV, G.A., redaktor; PRUDKIN, Ya.M., redaktor; DUL'NEV, V.P., tekhnicheskiy redaktor.

[Reconstruction of the mining industry and the improvement of the surface complex of mines in the Donets Basin; proceedings of a conference in Stalino, November 19-21, 1951.] Rekonstruktsiia gornogo khoziaistva i sovershenstvovanie poverkhnostnykh kompleksov ugol'nykh shakht Donbassa; trudy soveshchaniia v g. Stalino, 19-21 noiabria 1951 g. Moskva, Ugletekhizdat. 1952. 245 p. [Microfilm] (MLRA 9:2)

1. Russia (1923- U.S.S.R.) Ministerstvo ugol'noy promyshlennosti.
(Donets Basin--Coal mines and mining)

BAGASHEV, M.K., inzhener.

Some requirements concerning the literature on coal industry economy. Ugol' 29 no.9:1-9 S '54. (MLRA 7:11)

1. Ministerstvo ugol'noy promyshlennosti SSSR.
(Coal mines and mining)

BAGASHEV, Mikhail Kapitonovich; FEYTEL'MAN, N.G., redaktor izdatel'stva; DODEVA, O.V., redaktor izdatel'stva; NADEINSKAYA, A.A., tekhnicheskiy redaktor

[Profitableness in the Soviet and in the capitalist coal industry] Rentabel'nost' v ugol'noi promyshlennosti SSSR i kapitalisticheskikh stran. Moskva, Ugletekhizdat, 1956. 105 p. (MLRA 9:11)
(Coal mines and mining)

RAGASHEV, IVAN KAPITONOVICH

/3
T31.1
.B1

RENTABEL'NOST' V UGOL'NOY PROMYSHLENNOSTI SSSR I KAPITALISTICHESKIKH STRAN (EARNING CAPACITY IN THE COAL INDUSTRY OF SOVIET AND CAPITALISTIC COUNTRIES) MOSKVA, GOLITVKHIZDAT, 1956.

105, (3) P. TA LES (NAUCHNO-TEKH. IZVODSTVENNAYA LITERATURA PO V PROMSH. EKONOMIKI)

BIBLIOGRAPHY: P. 105-(106)

BAGASHEV, M.K., otvetstvennyy red.; BUCHNEV, V.K., otvetstvennyy red.; ZVYAGIN, P.Z., otvetstvennyy red.; SOSNOV, V.D., otvetstvennyy red.; ASTAKHOV, A.V., red.izdatel'stva; NADEINSKAYA, A.A., tekhn.red.

[Soviet coal industry; on the fortieth anniversary of the Great October Socialist Revolution] Ugol'naia promyshlennost' SSSR; k sorokaletiiu Velikoi Oktiabr'skoi sotsialisticheskoi revoliutsii. [Moskva] Gos.nauchno-tekhn.izd-vo lit-ry po ugol'noi promyshl., 1957. 635 p. (MIRA 10:12)

(Coal mines and mining)

15-57-7-10131D

Translation from: Referativnyy zhurnal, Geologiya, 1957, Nr 7, p 212 (USSR)

AUTHOR: Bagashev, M. K.

TITLE: On the Criterion of Mine Productivity and Means for Increasing This Productivity (O norme rentabel'nykh shakht i putyakh yeye povysheniya)

ABSTRACT: Bibliographic entry on the author's dissertation for the degree of Candidate of Economic Sciences, presented to the Moscow Mining Institute (Mosk. gorn. in-t) Moscow, 1957

ASSOCIATION: Mosk. gorn. in-t (Moscow Mining Institute)

Card 1/1

BAGASHOV, M.K.

Over-all mechanization and the automatization of operations in ten mines and three preparation plants in the R.S.F.S.R. Ugol' 34 no.7:61-62 Jl '59. (MIRA 12:10)
(Coal mines and mining) (Automatic control)

BUCHNEV, V.K., prof., doktor tekhn. nauk; KALININ, R.A., dotsent; KORABLEV, A.A., kand. tekhn. nauk; MONIN, G.I., inzh.; BELYAYEV, V.S., kand. tekhn. nauk; MERKULOV, V.Ye., inzh.; ALEKSEYENKO, V.D., inzh.; IL'SHTEYN, A.M., kand. tekhn.nauk; GELESKUL, M.N., kand. tekhn.nauk; KOBISHCHANOV, M.A., kand. tekhn.nauk; DOBROVOL'SKIY, V.V., kand. tekhn. nauk; MALYSHEV, A.G., inzh.; VOROPAYEV, A.F., prof., doktor tekhn. nauk; LIDIN, G.D., prof., doktor tekhn.nauk; TOPCHIYEV, A.V., prof.; VEDERNIKOV, V.I., kand. tekhn.nauk; KUZ'MICH, I.A., kand. tekhn. nauk; LEYTES, Z.M., inzh.; SYSOYEVA, V.A., kand. tekhn. nauk; MELAMED, Z.M., kand. tekhn.nauk; CHERNAVKIN, N.N., inzh.; KARPILOVICH, M.Sh., inzh.; MEL'KUMOV, L.G., inzh.; BOGOPOL'SKIY, B.Kh., inzh.; FROLOV, A.G., doktor tekhn.nauk; KHVOSTOV, F.K., inzh.; BAGASHEV, M.K., kand. tekhn. nauk; KAMINSKIY, I.N., inzh.; PETROVICH, T.I., inzh.; ZHUKOV, V.V., red. izd-va; LOMILINA, L.N., tekhn. red.; PROZOROVSKAYA, V.L., tekhn. red.

[Mining engineers' handbook]Spravochnik gornogo inzhenera. Moskva, Gos.nauchno-tekhn. izd-vo lit-ry po gornomu delu, 1960. (MIRA 14:1)

(Mining engineering--Handbooks, manuals, etc.)

BAGASHEV, Mikhail Kapitonovich; KIRZHNER, David Mironovich; CHETYRKIN, Mikhail Ivanovich. Prinimal uchastiye SURMILO, G.V., ZVYAGIN, P.Z., otv.red.; GOLUBYATNIKOVA, G.S., red.izd-va; OSVAL'D, E.Ya., red. izd-va; GALANOVA, V.V., tekhn.red.

[Reference book on the economics of the coal industry] Spravochnik po ekonomike ugol'noi promyshlennosti. Moskva, Gos.nauchno-tekhn. izd-vo lit-ry po gornomu delu, 1961. 418 p.

(MIRA 14:4)

(Coal mines and mining)

BAGASHEVA, A. M., Central Sci. Res. Pediatric Institute, Ministry of Public Health RSFSR

"Vascular Symptoms as Indicators of Various Regenerations in the Course of an Infectious Process," Pediatrics, No. 2, 1948.

BAGASHVILI, Shota Aronovich; KULAGA, Lev Nikiforovich; FLORINSKIY, I.I., red. izd-va; BRUSINA, L.N., tekhn. red.

Rustavi. Red. kollegiia: P.V. Abrosimov i dr. Moskva, Gos. izd-vo lit-ry po stroit., arkhit. i stroit. materialam, 1958. 27 p. (MIRA 11:7)

1. Soyuz arkhitektorov SSSR.
(Rustavi—Description)

MATESHVILI, G.I.; BAGASHVILI, S.L.; ANDRIYEVA, S.I.

Atherosclerosis treatment with histidine. Trudy Inst. klin. i eksper. kard. AN Gruz. SSR 8:113-118 '63. (MIRA 17:7)

1. Institut kardiologii AN GruzSSR, Tbilisi.

BAGATAYS, G.Ya., inzh.

Large slabs made of shale ash in the Estonian S.S.R. Bet. i zhel.-bet. 8 no.6:256-258 Je '62. (MIRA 15:7)
(Estonia—Precast concrete)

83470

S/182/60/000/001/004/008
A161/A029

26.2122

AUTHORS: Bagatov, B.N.; Martynov, V.N.; Povarov, V.S.

TITLE: Progressive Trends in Production of Forgings for Steam and Gas Turbine Blades

PERIODICAL: Kuznechno-shtampovochnoye proizvodstvo, 1960, No. 1, pp. 17 - 19

TEXT: Brief general information is given on new precision forging methods for turbine and compressor blades. TsNIITMASh has developed a new technology consisting in extrusion and rolling operations, and straightening combined with heat treatment. The first experimental blades for the 7th stage of GT-600-6 (GT-600-6) turbine and 14th and 16th stages of BK-50-1 (VK-50-1) are shown (Figs. 1 and 2) in shaping stages beginning with cylindrical billet and ending with ready forged blade. For comparison, the forging equipment used in industry at the time being, and suggested by LF VPTI on Leningradskiy filial VPTI tyazhelogo mashinostroyeniya (Leningrad Branch of VPTI of Heavy Machine Building) and by TsNIITMASh is listed in tables (Table 1 and 2). All methods give the same 2 - 3 mm machining allowance, but the new method requires simpler equipment and less power. The TsNIITMASh version (right in Table 1) takes a specialized 1,000-ton hydraulic press for ex-

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Progressive Trends in Production of Forgings for Steam and Gas Turbine Blades

trusion; specialized 315-ton forging rolls for rolling, and a special 2,000-ton press for straightening-sizing The general trend is organization of specialized production centers. Organisational suggestions have been made also by NIAT. TsNIITMASh has suggested five plan versions for line production of blade forgings for stationary steam and gas turbines. All systems either eliminate milling, or require only little of it, raise the metal utilization coefficient from 0.2 to 0.5, and cut the work and costs from 35 to 50% compared to the present production practice. An approximate equipment layout is shown (Fig. 3) for production of turbine and compressor blades with constant as well as varying cross section area and without reinforcement of the work portion. A hot-rolled round bar is straightened in machine "1", passes to a centerless stripping machine "2" for removing surface defects, then it is heated, and cut into blanks in a special die in a crank press, "3", then the blanks are heated without formation of scale to the temperature of the upper deformation interval, lubricated, flattened and extruded in a special press, "4", in single heating, cleaned after cooling in the installation "5", they pass into inspection and go on into the heating furnace "6" with protective atmosphere, pass into special forging rolls "7" and from

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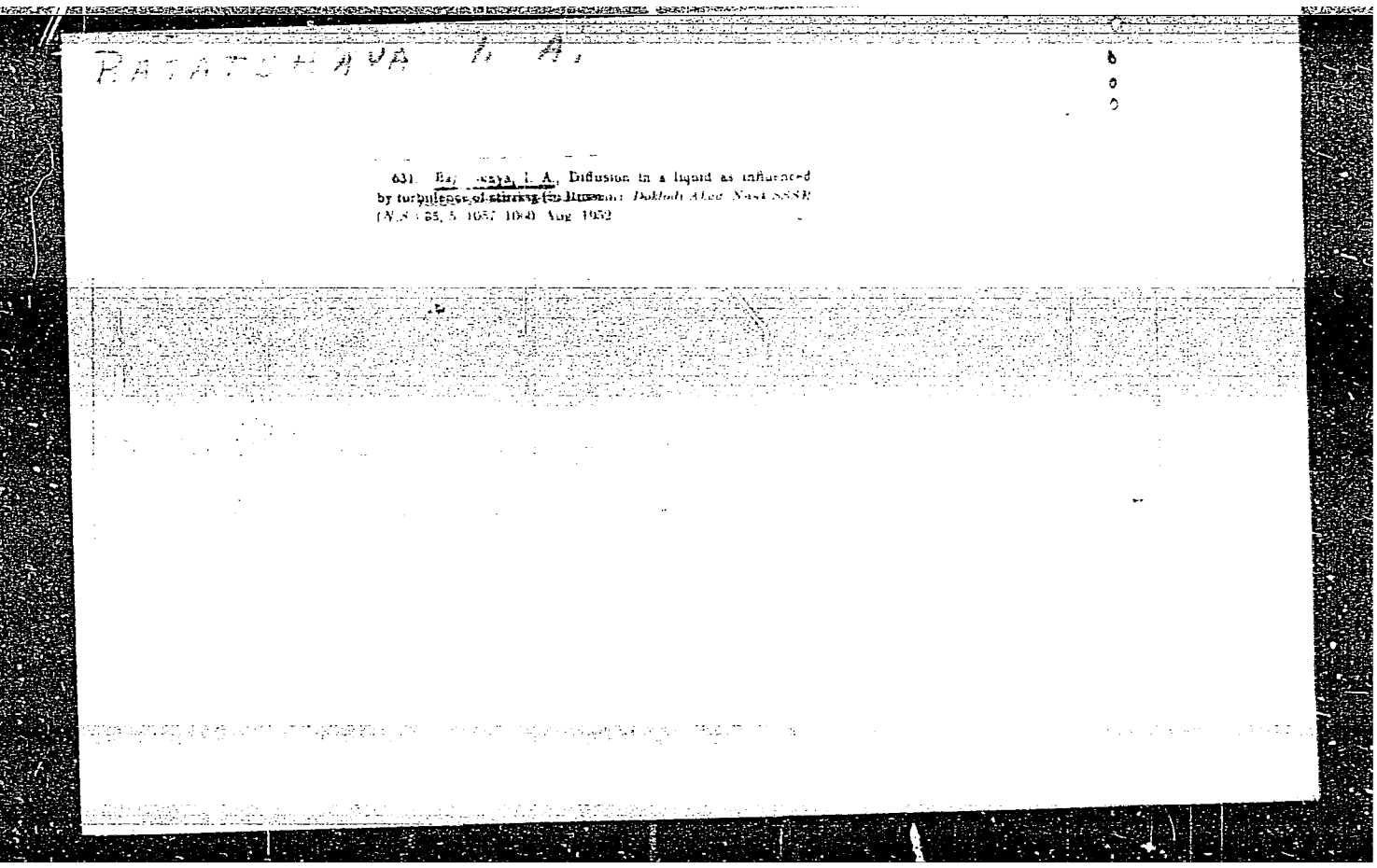
Progressive Trends in Production of Forgings for Steam and Gas Turbine Blades

there into the first die groove, then into the second die. Here the blade is deformed to the final size, and twisted in the output if necessary. Rolled forgings are cleaned, pass inspection, and go into heat treatment on the furnaces "8" and "9", and into the straightening press "10". This process has been tested in experiments at TsNIITMASh, and no deterioration of metal structure has been observed. The blade material is mentioned to be 2X13 (2Kh13) steel. Foreign practice in production of turbine blades is also briefly outlined, and reference is made to a German article (Ref. 2). There are 3 figures, 2 tables and 2 references: 1 Soviet and 1 German.

4



631. Ba[illegible]aya, L. A. Diffusion in a liquid as influenced by turbulence or stirring (in Russian). *Doklady Akad. Nauk SSSR* (N.S.) 85, 5, 1057-1060, Aug. 1952

39500

S/056/62/043/002/051/053
B108/B102

5.4800

AUTHORS: Bagatskiy, M. I., Voronel', A. V., Gusak, V. G.

TITLE: Measurement of the specific heat C_v of argon near its critical point

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 43, no. 2(8), 1962, 728-729

TEXT: The dependence of the specific heat of argon on the temperature near the critical point was studied with the aid of a technique developed by A. V. Voronel' and P. G. Strelkov (PTE, 6, 111, 1960). Near the critical point (transition from the two-phase system liquid-vapor into a homogeneous system) at a density of 0.521 g/cm^3, C_v tends to infinity. The limit of the difference between the specific heats of the heterogeneous and homogeneous phases can be regarded as a jump in specific heat. It amounts to 20 cal/mole·deg. The jump occurred at 150.5°K (critical temperature 150.7°K). There are 2 figures.

Card 1/2

Measurement of the specific heat C_v ... S/056/62/043/002/051/053
B108/B102

ASSOCIATION: Nauchno-issledovatel'skiy institut fiziko-tekhnicheskikh i radiotekhnicheskikh izmereniy (Scientific Research Institute of Physicotechnical and Radiotechnical Measurements)

SUBMITTED: June 1, 1962

Card 2/2

MIMINOSHVILI, S.Ya., kand.med.nauk; BERIYA, F.Ye.; TSKHADAYA, A.D.; BAGATURIYA, Sh.K.

Active detection of glaucoma among the population of Sukhimi. Vest.oft. 72 no.6:4-5 N-D '59. (MIRA 13:5)

1. Glaznoye otdeleniye Respublikanskoy bol'nitsy imeni A.A. Ostroumova (zav. - S.Ya. Miminoshvili).
(GLAUCOMA statist. prev. & control)

LOZOVOY, D.I.; BAGATURIYA, V.Ya.

Carnations and their protection from diseases and pests in Tiflis and environs. Vest. Tbil. bot. sada no.69:125-130 '63.

(MIRA 17:10)

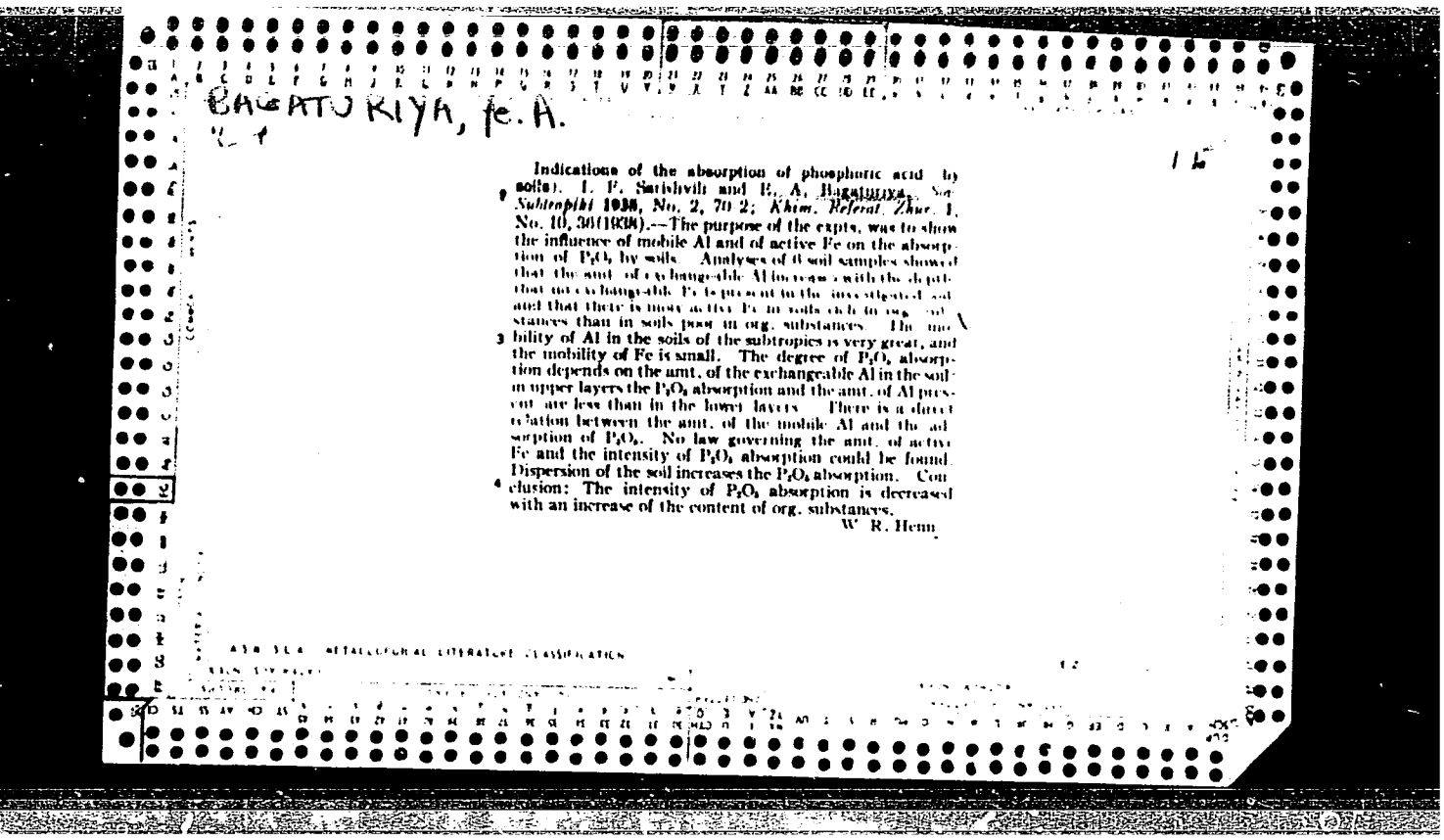
BAGATURIYA, V.Ya.

Some hothouse plants and their entomological resistance outdoors in shady spots. Vest. Tbil. bot.sada no.60:113-123 '63.

(MIRA 17:10)

BAGATURIYA, V.Ya.; LEONOVICH, K.E.

Controlling the boxwood gall gnat (Monarthropalpus buxi Lab.). Vest. Tbil. bot. sada no.69:131-133 '63. (MIRA 17:10)



BAGATURIYA, Ye. A.

Indications of the absorption of phosphoric acid by soils. I. P. Sarishvili and E. A. Bagaturiya. *Soobshcheniya Akad. Nauk Gruzinskoi SSR* 1938, No. 2, 70-2; *Khim. Referat. Zhur.* 1, No. 10, 36(1938).—The purpose of the expts. was to show the influence of mobile Al and of active Fe on the absorption of P_2O_5 by soils. Analyses of 6 soil samples showed that the amt. of exchangeable Al increases with the depth, that no exchangeable Fe is present in the investigated soil and that there is more active Fe in soils rich in org. substances than in soils poor in org. substances. The mobility of Al in the soils of the subtropics is very great, and the mobility of Fe is small. The degree of P_2O_5 absorption depends on the amt. of the exchangeable Al in the soil; in upper layers the P_2O_5 absorption and the amt. of Al present are less than in the lower layers. There is a direct relation between the amt. of the mobile Al and the absorption of P_2O_5. No law governing the amt. of active Fe and the intensity of P_2O_5 absorption could be found. Dispersion of the soil increases the P_2O_5 absorption. Conclusion: The intensity of P_2O_5 absorption is decreased with an increase of the content of org. substances.

W. R. Henn

BAGATURIYA, Ye. A.

Bagaturiya, Ye. A.

"The fertilization of the chinese tung tree A. Fordii under the conditions of Abkhaziya." Min Higher Education USSR. Azebaydzhan Agricultural Inst. Kirovabad, 1956. (Dissertation For the Degree of Doctor of Agricultural Sciences).

Knizhnaya letopis'
No 34, 1956. Moscow.

BAGATUROV, S.A.; SKOBLO, A.I., redaktor; L'VOVA, L.A., redaktor; POLOSINA, A.S., tekhnicheskiy redaktor

[Course on the theory of distillation and rectification] Kurs teorii peregonki i rektifikatsii. Moskva, Gos nauchno-tekhn. izd-vo neftianoi i gorno-toplivnoi lit-ry, 1954. 478 p. (MLRA 7:11)
(Distillation)

BAGATUROV, S.A.

Subject : USSR/Chemistry AID P - 1778

Card 1/1 Pub. 78 - 16/26

Author : Bagaturov, S. A.

Title : Some remarks concerning the hypothesis of the theoretical plate

Periodical : Neft. khoz., v.33, no.3, 65-68, Mr 1955

Abstract : The author criticizes the article of Ye. Ya. Susanov, "Kinetika rektifikatsii" in this journal, No.9, 1954, in which the concept of a "theoretical plate" in fractionating columns was erronously defined.

Institution: None

Submitted : No date

BAGATUROV, S. A.

Subject : USSR/Chemistry AID P - 1786

Card 1/1 Pub. 78 - 24/26

Author : Volokh, S.

Title : Bagaturov, S. A. Kurs teoric peregonki i rektifikatsii (Text-book on the Theory of Distillation and Rectification) Gostoptekhizdat, 1954. 478 pages (Book Review)

Periodical : Neft. khoz., v.33, no.3, 94-96, Mr 1955

Abstract : This text-book on the thermodynamic theory of distillation and rectification (fractionation) is favorably reviewed. The book is approved by the Ministry of Higher Education of the USSR as a text-book for students of institutions of higher learning.

Institution: None

Submitted : No date

EMIRDZHANOV, Rauf Tairovich; BAGATUROV, S.A., kandidat tekhnicheskikh nauk, dotsent, redaktor; GONCHAROV, I.A., redaktor;

[Principles of calculations for processes and apparatus used in petroleum refineries] Osnovy rascheta neftezavodskikh protsessov i apparatov. Baku, Azerbaidzhanskoe gos. izd-vo neftianoi i nauchno-tekhn. lit-ry, 1956. 422 p.
(Petroleum--Refining) (MLRA 9:6)

BAGATUROV, S.A.

Calculating peak stripper conditions in complex columns. Khim.i tekh. topl. no.6:67-72 Je '56. (MLRA 9:9)

1.Azerbaydzhanskiy industrial'nyy institut.
(Distillation, Fractional)

RAGATUROV, S.A.

Calculating peak stripper conditions in complex columns. Part 2.
Khim.i tekh.topl.no.7:68-71 Jl '56. (MLRA 9:9)

1.Azerbaydzhanskiy industrial'nyy institut.
(Distillation, Fractional)

BAGATUROV, S.A.

Comparing conditions of complete flooding during the rectification of multicomponent systems in plate and packing columns; thermodynamic theory. Khim. i tekh. topl. i masel no.3:65-71 Mr '57. (MLRA 10:4)
(Distillation apparatus)

BAGATUROV, S.A.

Theory of fractional distillation. Trudy Azerb. ind. inst. no.19:226-255 '57. (MIRA 11:9)
(Distillation, Fractional)

BAGATUROV, S.A.

Calculating combined absorption-desorption columns in gas fractionating devices. Khim. i tekh. topl. i masel 3 no.5:24-33 My '58.
(MIRA 11:5)

1. Azerbaydzhanskiy instrumental'nyy institut im. Azizbekova.
(Gas, Natural)
(Petroleum industry--Equipment and supplies)

BAGATUROV, S.A.

Theory of multicomponent rectification in a complex tower concentrator. Izv. vys. ucheb. zav.; neft' i gaz no. 5:85-91 '58. (MIRA 11:8)

1. Azerbaydzhanskiy industrial'nyy institut im. M.Azizbekova.
(Plate tower)

BAGATUROV, S.A.

Rectification of binary hydrocarbon systems in the presence of saturated water vapor. Izv. vys. ucheb. zav.; neft' i gaz no.1: 133-139 '58. (MIRA 11:8)

1.Azerbaydzhanskiy industrial'nyy institut im. M. Azizbekova.
(Distillation) (Systems (Chemistry))

AUTHOR: Bagaturov, S. A.

TITLE: The Calculation of a Combined Absorption-Desorption Column in Gas Fractionating Plants (K raschetu kombinirovannoy absorbtsionno-desorbtsionnoy kolonny gazofraktsionirуyushchikh ustanovok)

SOV/65-85-3-5/14

PERIODICAL: Khimiya i Tekhnologiya Topliv i Masel, 1958, Nr. 3, pp. 24 - 33. (USSR).

ABSTRACT: Selective absorption in a moving layer of a heat absorbent is increasingly used for the separation of petroleum gases into practically pure components. This article discusses the calculation and analysis of efficiency of one of the basic devices for an absorption plant. A "stabilizer for a saturated oil" (Ref.1) or a combined absorption-distillation column is described. A simplified scheme of such a plant is shown in Fig.1. The absorption-desorption columns make it possible to effect complete de- ethanisation of the saturated oil at comparatively low pressure of the order of 10 atms. Some of the drawbacks in I. V. Robu's method of calculation are discussed. The theory put forward is based on allowing for the constancy of the relative volatility of the components of the saturated oil in the interval of operating temperatures. The stabiliser is a combined

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apparatus comprising a distillation-rectification column and an ordinary absorber. The upper section of the absorber can be easily calculated e.g.according to the method of Kremser. The rectification of the multi-component hydrocarbon system is effected in the distillation section of the apparatus and methods of calculation of this section are suggested and discussed in detail. The volatility, quantities and compositions of the saturated oil components entering into the combined apparatus - Table 1. The pressure in the apparatus was 10 atms and the temperature of the raw material entering the same 40°C. Equilibrium compositions characterising the zero region of the limiting concentrations of the distillation column - Table 2. Calculations are given for methane and ethane. The described method of calculating combined absorption-distillation columns in gas fractionating plants, based on the theory of rectification of multi-component systems, makes it possible for the designer to indicate the composition of the inferior product and to select the number of

The Calculation of a Combined Adsorption-Desorption Column in Gas Fractionating Plants. SOV/65-58-5-5/7

distilling sections of the combined apparatus. There are 2 Figure , 2 Tables, 6 References: 3 English, 1 Rumanian and 2 Soviet.

ASSOCIATION: AzII im. Azizbekov

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RAGATUROV, S.A.

Hydraulic calculations of a fractionating tray. Izv. vys. ucheb. zav.; neft' i gaz 2 no.5:67-74 '59. (MIRA 12:8)

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(Distillation apparatus)

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Single-stage distillation of complex hydrocarbon mixtures in the presence of steam. Izv.vys.ucheb.zav.; neft' i gaz 2 no.9:71-78 '59. (MIRA 13:2)

1. Azerbaydzhanskiy institut nefti i khimii im. M.Azizbekova.
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BAGATUROV, S.A.

Calculating the minimal refluxing of a complex plate column. Izv. vys.ucheb.zav.; neft' i gaz 3 no.3:51-58 '60. (MIRA 14:10)

1. Azerbaydzhanskiy institut nefti i khimii imeni M.Azizbekova.
(Plate towers)

BAGATUROV, S.A.

Conditions of a minimum reflux ratio in the rectification of multicomponent mixtures. Khim.i tekh.topl.i masel 5 no.7:59-62 Jl '60. (MIRA 13:7)
(Distillation, Fractional)

BAGATUROV, Sergey Aleksandrovich; PLANOVSKIY, A.N., doktor tekhn. nauk, prof., retsenzent; SKOBLO, A.I., dots. retsenzent; TREGUBOVA, I.A., dots., retsenzent; BABUSHKINA, S.I., vedushchiy red.; POLOSINA, A.S., tekhn. red.

[Theory and calculation of distillation and rectification] Teoriia i raschet peregonki i rektifikatsii. Moskva, Gos. nauchno-tekhn. izd-vo neft. i gorno-toplivnoi lit-ry, 1961. 435 p. (MIRA 14:10)
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Calculation of a full refluxing system of a plate column.
Izv. vys. ucheb. zav.; neft' i gaz 4 no.8:87-92 '61.
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(Petroleum--Refining)

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Calculating the conditions for the minimal refluxing of columns used in finite reflux distillation unit fed with unsaturated crude. Izv. vys. ucheb. zav.; neft' i gaz 5 no.11:63-70 '62. (MIRA 17:6)

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Variations of tower devices and the conditions for their operation. Izv. vys. ucheb. zav.; neft' i gaz 6 no.1:65-70 '63. (MIRA 17:10)

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Studying laterite clays of the Tsetskhlauri deposit. Soob.AN Gruz. SSR 25 no.5:539-542 N '60. (MIRA 14:1)

1. Akademiya nauk GruzSSR, Institut prikladnoy khimii i elektrokhimii, Tbilisi. Predstavleno akademikom R.I.Agladze.
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2327 Bagaturova, L. N.

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BAGATUROVA, L.N., kandidat meditsinskikh nauk; BUNYATYAN, T.G., mladshiy nauchnyy sotrudnik

Clinical aspects of infants born by Cesarean section. Pediatriia no.3:20-23 My-Je '54. (MLRA 8:1)

1. Iz Nauchno-issledovatel'skogo instituta akusherstva i ginekologii Ministerstva zdravookhraneniya Armyanskoy SSR (direktor - kandidat meditsinskikh nauk P.A.Markaryan)
(INFANTS (NEWBORN)) (CESAREAN SECTION)

BAGATUROVA, L.N.

Early sexual maturation in children. Zhur. eksp. i klin. med. 3 no.1: 109-111 '63. (MIRA 16:10)

1. Institut akusherstva i ginekologii Ministerstva zdravookhraneniya Armyanskoy SSR.
(PUBERTY, PRECOCIOUS)

BAGATURYAN, L. N.

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ACCESSION NR: AP3000119 S/0062/63/000/005/0785/0788

AUTHOR: Bochvar, D. A.; Bagatur'yants, A. A.

TITLE: Binding energy and comparative stability of borazole and some heterocyclic molecules containing B and N atoms

SOURCE: AN SSSR. Izvestiya. Otdeleniye khimicheskikh nauk, no. 5, 1963, 785-788

TOPIC TAGS: binding energy, borazole, heterocyclic B-N ring systems, molecular orbital method, linear combination atomic orbitals, conjugation

ABSTRACT: Proceeding from the results of Roothaan and Mulliken (J. Chem. Phys., 16, no. 2, p. 118, 1948), the authors calculated the binding energy of benzene and borazole by the molecular orbital method (linear combination of atomic orbitals) taking overlap into account. Binding energies were also calculated for molecules of the type shown in Enclosure 1. Binding energies for borazole were 1.80 and 0.96 eV; those for (1), 3.96 and 2.16 eV; those for (2) 1.24 and 0.34 eV; those for (3) 1.28 and 0.66 eV; and those for (4) 0.72 and 0.48 eV. In compound (1) the stabilization energy was 20 and 25% higher than for borazole. Of the 5-membered rings, (3) was the most stable because Pi-electrons can spread out in this molecule. Orig. art. has: 1 equation, 2 tables.

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