"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3

KRIT, G.I.

Role of practical work in school workshops in the system of technical subjects. Politekh. obuch. no.6:9-13 Je '58.
(Manual training) (MIRA 11:6)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3

RAVDEL', G.A.; KRIT, N.A.; SHCHUKINA, L.A.; SHEMYAKIN, M.M., akademik

Synthetic paths in the preparation of the peptide part of ergot alkaloids. Dokl.AN SSSR 137 no.6:1377-1380 Ap '61. (MIRA 14:4)

1. Institut boilogicheskoy i moditsinskoy khimii Akademii meditsinskikh nauk SSSR.
(Ergot alkaloids)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3

RAVDEL', G.A.; KRIT, N.A.; OLADKINA, V.A.; SHCHUKINA, L.A.; SHEMYAKIN, M.M.

Depsipeptides. Report No.31: Synthesis of depsipeptides containing α-hydroxy-α-amino acid radicals. Izv. AN SSSR. Ser. khim. no.11:1987-1992 '65. (MIRA 18:11)

1. Institut khimii prirodnykh soyedineniy AN SSSR.

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3

VYSKOCIL, J.; BERKA, I.; KRITCKA, J.; za technicke spoluprace J. Hinstove a J. Kamenikove.

Fatal trichloroethylene poisoning following peroral intake.
Pracovni lek. 8 no.2:205-207 June 56.

1. Z Odd. chorob z povolani Fakultni nemocnice v Brne, prednosta doc. Dr. K. Kadlec.
(TRICHLOROETHYLENE, poisoning,
fatal, after peroral intake (Cz))
(POISONING,
trichloroethylene, fatal after peroral intake (Cz))

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3

ZEMLYAK, Karp Petrovich; KRITENKO, Grigoriy Prokopovich; NEZHNIPAPA, V.Ya., redaktor; MONZHERAN, V.F., tekhnichnyy redaktor

[Land of the Donets] Krai donets'kyi. Kyiv, Derzh.uchbovo-pedagog. vyd-vo "Radians'ka shkola," 1957. 185 p. (MLRA 10:8)
(Donets Basin--Coal mines and mining)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3

ZABOLOTNYY, I.I.; KOVTUN, V.P.; KRITKRMAN, V.M.

On the selective corrosion of zinc. Zhur.prikl.khim.28 no.6:655-659 Je '55. (MLRA 8:12)

(Zinc--Corrosion)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3

KRITIC, Dimitrije, ing.

Duralumin in the construction of railroad cars. Tehnika Jug 17 no.1: 89-91 Ja '62.

(Duralumin)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3

COUNTRY : YUGOSLAVIA

CATEGORY : Chemical Technology. Chemical Products and Their Applications. Chemical Wood Products. Hydrolysis*

ABS. JOUR. : RZhKhim., No 17, 1959, No. 62235

AUTHOR : Kritic, D.K.

INSTITUTE : -

TITLE : Development Perspective of Wood Dry Distillation in Yugoslavia

ORIG. PUB. : Drvarski glasnik, 1958, 6, No 7, 6

ABSTRACT : No abstract.

*Industry.

Card: 1/1

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3

KRITIC, D. P.

Prospective development of dry distillation of wood in Yugoslavia. p. 14.

DRVNA INDUSTRIJA. (Institut za drvno-industrijska istrazivanja) Zagreb, Yugoslavia
Vol. 10, no. 1/2, Jan/Feb. 1959

Monthly list of East European Accessions (EEAI) LC. Vol. 8, no. 9, Sept. 1959

Uncl.

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3

KA IKOVA, L.P.

Comparative appraisement of nourishing media for production of cultures of bacteria Isatchinko Danitch.

Mikrobiologiya. Vol. 21, p. 66. 1952.

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3

DOROFEYEV, Yu.G., kand. tekhn. nauk; KRITIN, D.I., inzh.; BUROVIN, V.L., inzh.

Automatic hot briquetting of metal chips. Mekh. i avtom. proizv. 19 no.4:13-14 Ap '65. (MIRA 18:6)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3

S/133/61/000/005/005/009
A054/A133

AUTHORS: Plekhanov, P.S.; Koshkin, V.A.; Kritinin, I.A.; - Engineers

TITLE: The practice of rolling high-manganese rails

PERIODICAL: Stal', no. 5, 1961, 423 - 425

TEXT: Tests were carried out at the Kuznetskiy metallurgicheskiy kombinat (Kuznetsk Metallurgical Combine) to produce high-manganese rail steel of the following composition (%): C 0.93; Mn 12.02; Si 0.09; P 0.09; S 0.021; Cr 0.05; Ni 0.13; Cu 0.14. The test ingots, 1.3 and 6 tons in weight, were left to cool in the molds for 4 days and, in order to increase the ductility of the cast steel they were subjected to the following homogenization process: 1) Loading the cold ingots into a furnace at a temperature of 300°C, 4 h 30 min holding; 2) heating from 300 to 700°C in 7 h 40 min, with an average temperature increase of 52°C/h; 3) heating from 700 to 1,050°C in 5 h 50 min, with a temperature increase of 60°C/h; 4) holding at 1,050 - 1,080°C for 48 h and cooling in air in the neighborhood of the furnace. No carbide phase was found after homogenization in the steel structure. Heating the 1.3-ton ingots in a continuous furnace was carried out in the following stages: 1) In the continuous zone (5 h 25 min) at a

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temperature of 530°C near the charge door; 2) heating zone (4 h 45 min) at a temperature of 1,200 - 1,235°C in the upper part and 1,160 - 1,200 - 1,165°C in the lower part (the metal temperature: 1,135 - 1,100°C); 3) soaking zone (2 h 30 min) at a temperature of 1,220 - 1,230°C in the upper part (the metal temperature: 1,100 - 1,150°C), the ingots are turned 3 times through 90°. The 6-ton ingots were heated from 100 to 800°C in 9 h with an average temperature increase of 66°C/ /h and from 800 to 1,030°C in 7 h 20 min at the rate of 33°C/h. It was found upon rolling these ingots that the reduction in the first passes had to be 30 - 40 mm, in the following passes 50 - 60 mm. The rails made of high-manganese steel proved satisfactory in the drop test [according to ГОСТ (GOST) 6944-54]. The radius of bending was twice as great as for carbon-steel rails, while after rolling the following values were obtained: σ_s: 30 - 32 kg/mm^2; σ_B: 70 - 73 kg/mm^2; δ: 20 - 22%; ψ: 19 - 20%. The metal structure of the specimens (water or air cooled) consisted of austenite polyhedra without a carbide phase; the rails, therefore, can be used without any additional hardening in water. The following scientific workers participated in the tests: M.M. Bazhenov, I.L. Vaynshteyn, P.G. Popov, N.I. Zakharenko, I.V. Manchevskiy (all from the Kuznetsk Metallurgical Combine); Yu.V. Ordina, A.P. Govorkov, N.A. Nesterov, V.I. Grigorkin [all from the Sibirskiy metallurgicheskiy institut (Siberian Metallurgical Insti-

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3

The practice of rolling high-manganese rails

S/133/61/000/005/005/009
A054/A133

tute)]. There are 2 tables.

ASSOCIATION: Kuznetskiy metallurgicheskiy kombinat [Kuznetsk Metallurgical (Integrated) Plant]

Card 3/3

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3

AFANAS'YEV, S.G.; DUKHANIN, A.S.; KVITKO, M.P.; SHUMOV, M.M.; DARUSHIN, R.I.; KOSHKIN, V.A.; ZAKHARENKO, N.I.; KRITININ, I.A.

Railroad rails made of oxygen-blown converter steel. Stal' 24 no.1:72-73 Ja '64. (MIRA 17:2)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3

CHELYSHEV, N.A.; DROSHCHINSKIY, V.M.; DARUSHIN, R.I.; KRITININ, I.A.; PSHENICHNOV, P.I.; KUCHKO, I.I.

Deformation of the metal in T-shaped passes during the rolling of R-50 type rails. Stal' 24 no.11:1013-1016 N '64. (MIRA 18:1)

1. Kuznetskiy metallurgicheskiy kombinat.

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3

KRITININ, V. (Pavlodar)

In memory of D.P. Bagaev. Sov.foto. 19 no.1:87 Ja '59. (MIRA 12:3)

(Bagaev, Dmitrii Polikarpovich, 1883-1958)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3

KRITININA, T.I. (Alma-Ata)

Change in the diameter of erythrocytes in infectious hepatitis and cirrhosis of the liver. Lab. delo 6 no.5:22 S-O '60. (MIRA 13:9)
(HEPATITIS, INFECTIOUS) (LIVER--CIRRHOSIS)
(ERYTHROCYTES)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3

KRITOROV, P.M.;ZAYCHENKO, G.Ye.;BEREZHNOY, I.N.

Use of conveyer belts in Chasov Yar quarries. Ogneupory 20 no.6: 269-276 '55. (MLRA 9:1)

1.Chasov-Yarskoye rudoupravleniye.
(Chasov Yar--Quarries and quarrying) (Conveying machinery)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3

ACC NR: AT7003885 (A) SOURCE CODE: UR/0000/66/000/000/0240/0250

AUTHOR: Kritovu, S. G.; Sobolev, V. V.; Syrbu, N. N.; Shutov, S. D.

ORG: none

TITLE: Energy band structure of crystals of groups IV, III - V, II - VI, and the Mg_2Si type

SOURCE: AN BSSR. Institut fiziki tverdogo tela i poluprovodnikov. Khimicheskaya svyaz' v poluprovodnikakh i termodinamika (Chemical bond in semiconductors and thermodynamics). Minsk, Nauka i tekhnika, 1966, 240-250

TOPIC TAGS: semiconducting material, semiconductor band structure, light reflection, optic spectrum

ABSTRACT: The authors investigated the band structure, using the reflection spectra of pure and alloyed, polished and etched samples, cleaved crystals, and dendrites of groups IV and III - V, and polished and etched crystals of groups II - VI (Si, Ge, GaAs, GaSb, InAs, InSb, InP, GaP, and AlSb), Mg_2Si, Mg_2Sn, and certain solid solutions of the systems InP-InAs, AlSb-GaSb, CdTe-HgTe, ZnSe-CdSe, Mg_2Si-Mg_2Sn, and Mg_2Si-Mg_2-Se. The various peaks observed on the different spectra of the substances are listed and compared with results obtained by others. Tables of the experimental values of the direct interband transitions are presented. It is stated in the conclusion that the lack of concrete and sufficiently detailed calculations of the bands and schemes for the chemical binding forces for most solids makes it very difficult

Card 1/2 UDC: 541.57

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3

ACC NR: AT7003885

to make further progress in the spectroscopy of crystals in k-space, which would help explain many physical and chemical properties of semiconductor compounds. Orig. art. has: 3 figures, 1 formula, and 2 tables.

SUB CODE: 20/ SUBM DATE: 20Aug66/ ORIG REF: 007/ OTH REF: 001

Card 2/2

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3

KRITS, B.O., inzh.; PIGOTT, S.G., inzh.; ROMM, V.S., inzh.

Using computing equipment in accounting and planning in an industrial enterprise. Mekh.i avtom.proizv. 17 no.9:17-20 S '63. (MIRA 16:10)

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3

AID P - 4791

Subject : USSR/Engineering

Card 1/1 Pub. 103 - 18/24

Author : Krits, I. G.

Title : Tracing attachment for cutting spiral lubricating grooves.

Periodical : Stan. i. instr., 27, 3, 39, Mr 1956

Abstract : A brief description of tracing device installed in the spindle of a lathe, for cutting spiral lubricating grooves in bronze bushings is given by the author. Two drawings.

Institution : None

Submitted : No date

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3

AID P - 5044

Subject : USSR/Engineering

Card 1/1 Pub. 103 - 15/22

Author : Krits, I. G.

Title : A universal attachment

Periodical : Stan. i instr., 27/4, 41, Ap 1956

Abstract : The author describes a small gadget used in turret lathes for machining cones and edges, and for making incisions on heads of screws and bolts. Three drawings.

Institution : None

Submitted : No date

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3

121-7-15/26

AUTHOR KRITS, I.G.

TITLE An Attachment Device for the Thread-milling Machine Mod. 563A for Milling Threads on the Points. (Prisposobleniye k rezbofrezernomu stanku, mod. 563 A dlya frezerovaniya rezby v tsentrakh.- Russian)

PERIODICAL Stanki i Instrument 1957, Vol 28, Nr 7, pp 32-33.

ABSTRACT In order to increase the working capacity, threads are milled instead of being cut by means of dies, threading die heads and thread tools. On the thread milling machines of the types 563A and 563B short external and internal threads can be cut by milling cutters, the semi-finished product being clamped between tongs or 3- jaw chucks. The cutting of an external thread on the heads of the milling machine was not provided for by the construction, a fact which restricts the possibilities of a broad-scale introduction of the procedure of thread milling. This paper describeds a device already introduced in practice for the thread milling machine 563 A for milling on the points; its installation does not influence the kinematics of the machine. By means of this device a slow rotation is given to the product,

CARD 1/2

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3

An Attachment Device for the Thread-milling Machine Mod. 563A for Milling Threads on the Points.

121-7-15/26

as well as an axial shifting and a traverse shifting for cutting by the mill. The axial longitudinal motion of the spindle with the product with regard to the mill is performed by a cylindrical exchangeable copying device. The directions of rotation of tool and work piece are opposite to each other. Construction and functioning of the device are described and explained by a drawing. The installtion of the machine does not meet with any difficulties. Adaption to another thread is effected by exchange of the copying device and does not take longer than 15-20 minutes. By this device the thread milling machines have been made more universal.
(1 drawing)

ASSOCIATION: not given.
PRESENTED BY: -
SUBMITTED: -
AVAILABLE: Library of Congress.

CARD 2/2

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3

KRITS, I.G.

121-4-17/32

AUTHORS: Dinaburgskiy, G.M. and Krits, I.G.

TITLE: Mechanisation of the End Fitting Joining Procedure for Flexible Hoses (Mekhanizatsiya protsessa zadelki kontsov gibkikh shlangov)

PERIODICAL: Stanki i Instrument, 1958, No.4, pp. 33 - 34 (USSR).

ABSTRACT: The process of attaching end fittings to flexible hoses of the wire braided rubber type is described. A clamping fixture (Fig.3) and a torque limiting tool for inserting the socket are illustrated.

There are 4 figures.

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Card 1/1

1. House couplings-Attachment methods

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3

KRITS, Isak Gedal'yevich; KOGAN, S., red.; ABBASOV, T., tekhn. red.

[Progressive methods of working molded surfaces] Progresivnye sposoby obrabotki fasonnykh poverkhnostei. Tashkent, Gos. izd-vo Uzbekskoi SSR, 1962. 29 p. (MIRA 17:4)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3

KEITS, I.G.; VAYSBURG, V.A.

Manufacturing fittings by die stamping. Biul.tekh.-ekon.inform.Gos. nauch.-issl.inst.nauch.i tekh.inform.18 no.9:17-18 S '65.
(MIRA 18:10)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3

VAYNTRUB, V.K.; BORODAY, I.K.; GAL'PERIN, F.I. [deceased]; GRIB, A.I.; KALIKA, S.B.; KOLESNIK, I.V.; KRITSBERG, E.L.; KUPRIY, A.M.

Press molds for the hot vulcanization of rubber soles; Soviet Certificate of Inventions No.141077. Kozh.-obuv.prom. 4 no.8:42 Ag '62. (MIRA 15:8)
(Vulcanization—Technological innovations)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3

KOLESNIK, I.V. [Kolesnyk, I.V.]; KRUTSBERG, Ye.L.

The VU-1 machine for attaching boot tabs by the vulcanization method. Leh.prom. no.1:19-23 Ja-Mr '63. (MIRA 16:4)

1. Proyektno-konstruktorskoye byuro Ukrlegmashproyekt.

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3

[illegible], L. [illegible]. -- "Delaying the Blossoming of Peach on Fruit Trees to Protect Them From Spring Frosts." Sub 19 Mar 51, Inst of Plant Physiology imeni K. A. Timiryazev. (Dissertation for the Degree of Candidate in Biological Sciences).

SO: Vechernaya Moskva January-December 1952

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3

KRITSKAYA, A.V

Metallography

Causes of the Weakening of the Intensity of X-Ray Lines of Martensite. V. A. Ilina, A. V. Kritskaya, and G. V. Kurdyumov. (*Doklady Akademii Nauk SSSR*, 1952, **85**, 4, 773-775). [In Russian]. To determine the character of distortion of the crystal lattice of martensite, measurements of the intensity of X-ray reflections from quenched steels (0·0·35%, and 0·41%) at temperatures of + 23° C. and 185° C. were made. It is concluded that the martensite lattice is characterised by the existence of lattice stresses of the third order. The lattice stresses are increased by the presence of carbon atoms, and the interatomic bonds in martensite are therefore weaker than in α-iron.—V. G.

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3

KRITSKAYA, B.K., kand.fiz.-mat.nauk; KURDYUMOV, G.V., akademik; STELLETSKAYA, T.I.

Effect of chromium on the binding energy in -iron crystals. Probl. metalloved. i fiz. met. no.4:408-411 '55. (MIRA 11:4)
(Iron--Metallography) (Chromium)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3

KRITSKAYA, D.A.; LARIN, I.K.; PONOMAREV, A.N.; TAL'ROZE, V.L.

Calorimetric study of the radiation-induced solid phase polymerization of acrylonitrile at 135° K. Izv. AN SSSR Ser. khim. no.7:1356 Jl '64. (MIRA 17:8)

1. Institut khimicheskoy fiziki AN SSSR.

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3

SOURCE: Vysokomolekulyarnye soyedineniya, v. 6, no. 11, 1964, 1944-1951

[illegible] nitrile radiation polym[illegible]

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APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3

Dissertation: "Investigation of the Series of Bicyclic Compounds." Cand Chem Sci, Moscow State Univ, Moscow, 1953. (Referativnyy Zhurnal--Khimiya, Moscow, No 5, Mar 54)

SO: SUM 243, 19 Oct 54

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3

USSR/ Organic Chemistry - Synthetic organic chemistry E-2

Abs Jour : Referat Zhur - Khimiya, No 4, 1957, 11803

Author : Nesmeyanov A.N., Kritskaya I.I.
Inst : Department of Chemical Sciences, Academy of Sciences USSR
Title : On Condensation of Ferrocene with Aldehydes

Orig Pub : Izv. AN SSSR, Otd. khim. n., 1956, No 2, 253-254

Abstract : By interaction of 0.04 mole ferrocene (I) and 0.04 mole HCHO (in the form of a 40% solution), in the presence of 50 ml 96% H_2SO_4 (-15°, 15 minutes; 15-20°, 30 minutes; 65-75°, 75 minutes), is obtained a solution of the cathion of bis-ferrocenylene-methane, which is reduced to bis-ferrocenylene-methane (II) $CH_2(C_5H_4FeC_5H_4)_2CH_2$, by addition of 30-40 ml concentrated HCl and $SnCl_2$, yield of II, 65-75%, MP 191° (from dioxane). Under the same conditions, from 0.08 mole I and 0.08 mole C_6H_5CHO was obtained bis-ferrocenylene-phenylmethane (III) $C_6H_5CH(C_5H_4FeC_5H_4)_2CHC_6H_5$, yield 30-37.

5%, MP 218-220° (from dioxane), and the product of incomplete

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USSR/ Organic Chemistry - Synthetic organic chemistry E-2

Abs Jour : Referat Zhur - Khimiya, No 4, 1957, 11803

condensation $C_5H_5FeC_5H_4CH(C_6H_5)C_5H_4FeC_5H_4CH(OH)C_6H_5$, yield 30-37.5%, MP 268-270° (all melting points were determined in sealed capillaries). III was removed from the mixture with boiling acetone.

Card 2/2

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3

Kritskaya, I.I.

20-3-21/52

AUTHORS: Nesmeyanov, A. N., Academician, Kazitsyna, L. A., Lokshin, B. V. and Kritskaya, I. I.

TITLE: Position of Substituents in Ferrocene Compounds, as Determined From Infrared Absorption Spectra (Opredeleniye polozheniya zamestiteley v ferrotsenovykh soyedineniyakh po infrakrasnym spektram pogloshcheniya)

PERIODICAL: Doklady AN SSSR, 1957, Vol. 117, Nr 3, pp. 433 - 436 (USSR)

ABSTRACT: With respect to the possession of the apparently greatest series of these spectra of ferrocene together with the derivatives, the authors are able to draw the conclusion on the conformity of the spectra mentioned, with some characteristics of their structure. These conclusions helped at the establishment of the structure of the ferrocene homologues, and rendered possible the precising of structure of the condensation products of the formaldehyde and other aldehydes with ferrocene. Up to now the first author has worked out together with E. G. Perevalova (reference 17) two methods of the determining mentioned in the title, both of which show limitations. 1.) Catalytic hydrogenation under rigorous conditions leads to corresponding cyclopentane derivatives, 2.) Bromination

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20-3-21/52

Position of Substituents in Ferrocene Compounds, as Determined From Infrared Absorption Spectra

leads to pentabrominecyclopentane in the case of such ferrocene derivatives possessing a non-substituted cyclopentadiene ring. As the condensation products of ferrocene with formaldehyde, according to both methods, do not possess the nonsubstituted rings mentioned, they have structure I (shown at the scheme) and not an isomere - II. The infrared spectra of the ferrocene compounds, according to the high molecular symmetry, are remarked by simplicity. In addition to the C-H-valent oscillations in the range of from 3000 - 3100 cm^{-1} they have only still 4 sufficiently intensive strips; the frequencies at 811 and 1001 cm^{-1} arise according to C--H deformation oscillations. The most intensive bands correspond to the frequencies at 1002 and 1008 cm^{-1}. They were chosen as criterion of determination of position of the substituents. Spectra of ferrocene and of mono-substituted ferrocenes with very different substituents were recorded (table 1 Nr 1 - 16), furthermore, spectra of 7 di-substituted having the substituents notoriously in different rings. Here, frequencies 1002 and 1007 cm^{-1} did not occur. However, they were found as intensive strips in the spectra of the compounds Nr 24 - 28, the fact of which points to the occurring of a free cyclopentadienyl ring. This ring was chemically proved

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Position of Substituents in Ferrocene Compounds, as Determined From Infrared Absorption Spectra

by the bromination reaction for the compounds Nr 26 - 28. In presence of surplus bromine a stereoisomeric mixture of pentabromine-cyclopentane with a melting point = 83 - 101° was isolated out of these 3 substances in tetrachlorinecarbon (at its boiling temperature). Substance Nr 28 has a non-closed structure, because here among others the frequency 1350 cm^{-1} being characteristic for the deformation oscillations of the hydroxyl group was found. Di-substituted ferrocenes (29 - 30) (table 1) have a free cyclopentadienyl ring, because within their spectra occur the frequencies 1002 and 1007 cm^{-1}. At ferrocene compounds containing a carbonyl group conjugated with ferrocene ring, the signification of the frequencies of the C = O - group was investigated (table 2). Therefore is to be seen that the frequency of the ketone C = O is lying in the range of 1650 - 1678 cm^{-1}, the fact of which may be explained by the conjugation of the carbonyl with the cyclopentadienyl ring. There are 2 tables, and 20 references, 11 of which are Slavic.

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20-2-21/52

Position of Substituents in Ferrocene Compounds, as Determined From Infrared Absorption Spectra

ASSOCIATION: Institute for Elemental-organic Compounds AN USSR (Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR)

SUBMITTED: June 26, 1957

AVAILABLE: Library of Congress

Card 4/4

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3

SOV/20-121-3-23/47

AUTHORS: Nesmeyanov, A. N., Member, Academy of Sciences, USSR, Kritskaya, I. I.

TITLE: Stereochemistry of σ,π-Conjugation (Stereokhimiya σ,π-sopryazheniya). α-Chloromercury Camphenilone (α-khlormerkurkamfenilon)

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol. 121, Nr 3, pp. 477-480 (USSR)

ABSTRACT: At the beginning of 1950 the author mentioned first carried out exchange reactions with several factors of those atoms (or groups) which are connected with the carbon atom at the top of the bridge of a bicyclic system. (Ref 1). Several phenomena of inertia of the atom in this position are explained by Bredt's rule (Ref 3). One of these phenomena is e.g. the fact that dehydration and dehydrohaloidation at the expense of the atoms H, Hal, OH at the top of the bridge are impossible. Other phenomena, however, such as the incapability of decarboxylating β-ketonic acids with a carboxyl at the top of the bridge further the incapability to exchange camphenilone hydrogens for deuterium (even in presence of bases, Ref 4) demand already special evidence; namely that

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the decarboxylation reaction of β-ketonic acids and the keto-enol exchange in ketones undergo a stage of enolization. There is obviously no relation between the incapability of exchange of the acid at the top of the bridge and Bredt's rule. It could be explained by the necessity of the Walden inversion in the case of nucleophilic exchange. The Walden inversion, however, is impossible with the rigid system at the top of the bridge. The fact that the incapability of exchange of the atoms at the top of the bridge cannot be explained made the first author believe that the axes of σ- and π-clouds of electrons have to be parallel for a complete manifestation of the σ,π-conjugation and that the conjugation is eliminated if the axes are in vertical position to each other (Ref 1). This paper represents an example for the re-examination of this hypothesis. Correy and Sneen (Ref 5a) published (1955) a similar theory apparently without having known reference 1. α-Chloromercury camphenilone which was synthesized by the authors has a mercury atom. It is added to the carbon atom at the top of the bridge which is at the same time an α-atom in its relation to the carbonyl. This

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Stereochemistry of α,β-Conjugation. SOV/20-121-3-23/47
α-Chloromercury Acetophenilone

mercury atom has a considerable reactivity which by far exceeds that of mercury in its alkyl compounds. The authors proved that this considerable inertia of the system Hg-C-C=O neither depends on the Walden inversion nor on Bredt's rule. The only remaining explanation is the elimination of the conjugation of the Hg---C- and C=O-bindings as a result of the vertical position of the axes of the clouds of electrons and the elimination of the possibility of penetration into each other. The regularity found in 1950 and now supported by further evidence is more comprehensive than Bredt's rule. There are 13 references, 6 of which are Soviet.

ASSOCIATION: Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR (Institute of Elemental-Organic Compounds, AS USSR)

SUBMITTED: April 21, 1958

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3

33984
S/062/62/000/002/009/013
B117/B138

15.8150

AUTHORS: Nesmeyanov, A. N., and Kritskaya, I. I.

TITLE: 1,2-diferrocenyl-1,2-diphenyl ethane and 1,1-diferrocenyl-1,2-diphenyl ethane

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye khimicheskikh nauk, no. 2, 1962, 352 - 354

TEXT: It is shown that the condensation products of ferrocene and aldehydes described in Ref. 1 (Izv. AN SSSR. Otd. khim. n. 1956, 253; A. N. Nesmeyanov, L. A. Kazitsina, B. V. Lokshin, and I. I. Kritskaya, Dokl. AN SSSR, 117, 433 (1957)) have the structure of symmetric 1,2-diferrocenyl ethanes. This structure was confirmed by Rinehart and co-workers (Ref. 2, see below), who showed that $\Phi CH_2CH_2\Phi$ (Φ = ferrocenyl radical) is formed over the stage ΦCH_2OH carbonium cation ΦCH_2^+, which is evidently converted by inner reduction into the doubling radical $\Phi^+CH'_2$. This viewpoint was experimentally confirmed when 1,2-diferrocenyl ethane was produced under the effect of

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33984
S/062/62/000/002/009/013
1,2-diferrocenyl-1,2-diphenyl... B117/B138

$FeCl_3$ on $C_6H_5CH_2Li$ (Ref. 4: A. N. Nesmeyanov, E. G. Perevalova, and Yu. A. Ustynyuk, Dokl. AN SSSR, 133, 1105 (1960)) and under the action of $ClCH_2CH_2Cl$ on ferrocene in the Friedel-Crafts reaction (Ref. 3: A. N. Nesmeyanov, N. S. Kochetkova, and R. B. Materikova, Dokl. AN SSSR, 136, 1096 (1961)). Diferrocenyl ethanes are also formed by the condensation of ferrocene with benzaldehyde. Benzoyl ferrocene reduced according to Clemmensen yielded the unsymmetric 1,1-diferrocenyl-1,2-diphenyl ethane. In addition to the desired hydrocarbons, this reaction yields also pinacolines and the respective hydrocarbons, obviously over the pinacone stage. There are 6 references: 3 Soviet and 3 non-Soviet. The most recent reference to English-language publications reads as follows: Ref. 2: K. L. Rinehart, Ch. J. Michejda, P. A. Kittle, J. Amer. Chem. Soc. 81, 3162 (1959).

ASSOCIATION: Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR (Institute of Elemental Organic Compounds of the Academy of Sciences USSR)

SUBMITTED: June 29, 1961

Card 2/2

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3

S/062/62/000/010/003/003
B144/B186

AUTHORS: Nesmeyanov, A. N., Kritskaya, I. I., and Antipina, T. V.

TITLE: Application of adsorption chromatography when working with ferrocene derivatives

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye khimicheskikh nauk, no. 10, 1962, 1777 - 1783.

TEXT: The formation of keto groups on the central C atom was observed when chromatographing ferrocenes (F'). More detailed studies were made of this phenomenon in aralkyl-F', $F'CH_2Ar$, and in ferrocenyl carbinols, F'CH(OH)R (R being Ar, Alk), chromatographed on "chromatographic" Al_2O_3 (ГОСТ 2962-54 (GOST 2962-54); pH 6.7 - 7; H_2O 3% by weight) and on АСМ (ASM) and КСМ (KSM) silica gel in air. The acidity of the adsorbents was determined by H. A. Benesi's method (J. Amer. Chem. Soc. 78, 5490 (1956)). Al_2O_3:aralkyl-F' yielded a distinct amount of keto derivatives; benzyl-F', for example, yielded ~13% benzoyl-F' after 92 hrs contact at room temperature. Alkyl-F'

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became oxidized only in traces, if at all. With a contact time of 120 - 200 hrs, the ferrocenyl aryl carbinols $F'CH(OH)C_6H_5$, $F'[CH(OH)C_6H_5]_2$, and $F'CH(OH)CH_3$ yielded respectively 92, 76.8, and 34%. Dehydration at 300°C in an N_2 stream increased the catalytic activity of Al_2O_3. The degree of oxidation decreased when Al_2O_3 had been exposed to air or CO_2 for a considerable time, but reducing the contact time of $F'CH_2C_6H_5$ from 90 to 4 hrs increased the $F'COC_6H_5$ yield from 13 to 32% when air or O_2 was blown through the adsorption column. There was no oxidation when Al_2O_3 was treated with alkali. When Fe had not been separated from SiO_2, oxidation of alkyl and aralkyl-F' and of diferrocenyl ethanes easily occurred, forming ferricinium cations of F' derivatives with electron-donor substituents. Ferrocenyl carbinols were disproportionated and etherified. This reaction depended on the acidity of SiO_3. 1,1'-di-(α-hydroxy benzyl)-F' was not disproportionated, but yielded 55% of the internal ether besides small amounts of $F'(COC_6H_5)_2$ and ferrocinium cations. Polyaryl methyl

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carbinols yielded ether under the same conditions. Benzhydrol for example, gave 41% of dibenzhydryl ether. The oxidations described are important especially for chromatographing small amounts. The conditions and results of 41 experiments are given in a table. There is 1 table.

ASSOCIATION: Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR (Institute of Elemental Organic Compounds of the Academy of Sciences USSR). Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova (Moscow State University imeni M. V. Lomonosov)

SUBMITTED: March 26, 1962

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3

NESMEYANOV, A.N.; KRITSKAYA, I.I.

Formation of ferrocenylcarbinol ethers and their hydrolysis by adsorption chromatography. Izv. AN SSSR Ser. khim. no.12: 2160-2165 D '64 (MIRA 18:1)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3

NESMEYANOV, A.N., akademik; KRITSKAYA, I.I.; FEDIN, E.I.

Synthesis and properties of π-allylcarbonyl complexes of iron. Dokl. AN SSSR 164 no.5:1058-1061 O '65. (MIRA 18:10)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3

CA KRITSKAYA, L.M.

15 A

Retardation of opening of buds on fruit trees by means of chemical agents. Yu. V. Rakitin and L. M. Kritskaya. *Doklady Akad. Nauk S.S.S.R.* 70, 295-7(1951). H.A.

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KRITSKAYA, N.K.
P.2

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SOV/10-59-4-25/29

AUTHORS: Velichko, A.A., and Mints, A.A.

TITLE: The Sixth Conference of Young Scientific Workers of the Institut Geografii AN USSR (Institute of Geography AS USSR)

PERIODICAL: Izvestiya Akademii nauk SSSR, Seriya geograficheskaya, 1959, Nr 4, pp 152-154 (USSR)

ABSTRACT: The article covers the Sixth Conference of Young Scientific Workers of the Institute of Geography AS USSR which took place in mid-March, 1958. 35 reports were read by the following scientific workers. I.S.Glukh reported on "Some Genetic Regularities in the Distribution of Atmospheric Precipitation", V.M. Kotlyakov and S.A. Yevteyev commented on structural methods in snow and ice research in the Antarctic region; L.P. Zunitsyn spoke on the connection between the relief and hydrographical network and the latest tectonic movements in the Northern Trans-Ural area. S.P. Ovchinnikova evaluated the evaporation according to the water balance method from the African continent; N.Ya. Mironova discussed evaporation problems in the gulf of Kara-Bogaz-Gol; I.M. Lebedeva and Ye.N. Minayeva reported on the impact of solar radiation on snow during its melting in the Trans-Volga region; A.V. Yachina spoke on snow radiation near the Elbrus Weather Station; Ye.Ye. Gurtovaya lectured on snow conditions in the mountains of Central Caucasus; N.N. Orlov reported on his new method to measure the amount of snow carried by winds, whereby snow-flakes are recorded by a photoelectric device; Yu.L. Rauner, Yu.L. Karanova, and N.I. Rudnev spoke on the heat balance observations they compiled at the Zaporskaya Scientific Station near Moscow; S.Y. Bass lectured on spring water discharge and soil washout also studied there; N.N. Dreyer and I.N.Sterhenskaya lectured on how to calculate the maximal spring water discharge in the Yenisey and Lena rivers according to the method of M.V. Sribnyy; R.Y. Nikolayeva lectured on sea levels of the Caspian sea during the V-XIX centuries and E.Y. Martynova on the lake levels in the Turgay depression during 1849-1958; L.Y. Mukhina reported on the rivers and lakes of the Vitim plateau; N.Y. Ryabkov discussed Pliocene forms of relief in the river valleys of the Kama basin; A.A. Velichko elucidated on loess deposits in the central areas of the Russian plain; D.A. Liliyenberg lectured on "Torrent-Like Phenomena in Daghestan" and A.Ye. Yermakov on "Classification of Torrents in Central Caucasus"; A.G. Chakishev gave a geobotanic survey of the Central Urals; N.M. Stupina lectured on the division of the Trans-Ural wood-and-steppe area into single relief types;

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Card 3/5

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SOV/10-59-4-25/29

The Sixth Conference of Young Scientific Workers of the Institut Geografii AN USSR (Institute of Geography AS USSR)

K.Ye. Gorodetskaya explained how the hollows on the left bank of the Irtysh river near Pavlodar originated; [illegible] gave a short physical and geographical survey on the Trans-Angara area; [illegible] Yenzher reported on her work experience in the analysis of a map of morphogenetic ground forms made by aerial photography in the Buryatskaya ASSR. D.A. Timofeyev discussed relief origin in the southern part of the Amur and Zeya rivers area; V.P. Chichagov compared morphological and morphometric methods to measure roll coefficients; O.N. Shubnikova and Yu.V. Morozov give a zoogeographical survey on birds in the central part of the Yakutskaya ASSR; Ye.S. Shatzilo reported on the development of the Karaganda industrial area; A.V. Tikhonov discussed data on the distribution and specific features in the fishing economy of the Evenkiyskiy natsional'nyy okrug (Evenki National Area); [illegible] reported on the lumber industry in the Arkhangel'skaya oblast' and Gor'kovskiy ekonomicheskiy rayon (Gor'kiy Economic District) respectively; N.P. Shtutzer and G.L. Mel'nikova lectured on the physical traits, population, and economy of the Land Baden-Wuerttenberg, West Germany. The conference was also attended by representatives of the Moskovskiy gosudarstvennyy universitet (Moscow State University), Tsentral'nyy institut prognozov (Central Institute of Prognoses), Institut merzlotovedeniya AN SSSR (Institute of Permafrost Research AS USSR), and other organizations. The following senior workers of the Institute of Geography AS USSR took part in the discussions: A.P. Gal'tsov, B.L. Dzerdzeyevskiy, L.D. Dolgushin, A.G. Doskach, N.B. Dumitrashko, M.I. L'vovich, S.N. Ryazantsev, K.F. Sribnyy, B.A. Fedorovich, and others.

Card 5/5

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3

KRITSKAYA, N.N.

CA

Toxicity of Wilson-Blair medium to anaerobes. N. N. Kritskaya (Central Lab. Sanitation and Hyg., Moscow). *Vibrionologiya* 17, 82-6(1948).—The Wilson-Blair medium (prescribed Fe content 166 mg./l.) depends on reaction with Na_2SO_3 to form a black sulfide ring around bacterial colonies. The medium is noticeably toxic to anaerobes and some aerobes. Tests were made with 4 variations of the medium: as prescribed; without Fe; without Na_2SO_3; without either. The test organisms were *B. subtilis*, *B. mesentericus*, *B. megatherium*, *B. mycoides*, *Staphylococcus albus*, *Escherichia coli*, *Proteus vulgaris*, *Clostridium welchii*, *Cl. sporogenes*, and *Cl. tetani putrescens*. Results indicate that Fe is the toxic agent, at 332 mg./l. it paralyzed the organisms, and at 83 mg./l. was only slightly less toxic than at the prescribed 166 mg./l. At 16.6 mg./l. the sulfide ring, though gray instead of black, was still plain enough for detecting reacting organisms, and there was no observable toxicity.

Julian F. Smith

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3

S/137/61/000/011/042/123
A060/A101

AUTHORS: Bergel'son, L. P., Kritskaya, N. V., Martynova, Z. K.

TITLE: Technological study of the poly-metallic ore of one of the Ural deposits

PERIODICAL: Referativnyy zhurnal. Metallurgiya, no. 11, 1961, 9, abstract 11G66 ("Tr. Tsentr. n.-i. gornorazved. in-ta", 1960, no. 39, 43 - 44)

TEXT: The poly-metallic ore from one of the Ural deposits was tested for concentration. In view of the fact that Zn, Fe, Cd (besides the Au and Ag) may be of some interest, the tests were carried out in the direction of obtaining methods of extracting the indicated elements. First the ore under test was subjected to gravitational concentration on a jigging machine and a concentration platform to separate out from the technological process the unyielding ore and the free Au and Ag. The gravitational concentrate was subjected to amalgamation, and the residues of the amalgamation may be utilized as a pyrite concentrate containing up to 40% Fe and 50% S. The main technological process of treating this ore turned out to be the collective flotation, to which the residues of the jigging, and a mixture of the jigging residues with the residues of the concentra-

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tion platform were subjected, and whose optimal grain size was 0.15 mm. The collective concentrate was subjected to selective flotation with separation of Zn and FeS_2 concentrates. The silver and gold are extracted in basic concentrates and from the flotation residues by the cyaniding process.

A. Shmeleva

[Abstracter's note: Complete translation]

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3

KRITSKAYA, S.S. [Kryts'ka, S.S.]

Impact of a viscoelastic rod of variable cross section. Dop. AN URSR no.11:1455-1460 '63. (MIRA 17:12)

1. Dnepropetrovskiy gosudarstvennyy universitet.

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3

BALL', Yu.M.; KRITSKAYA, T.I.

Result of the acclimatization of Ussuri raccoon dogs in Rostov Province. Zool.zhur. 32 no.3:513-523 My-Je '53. (MLRA 6:6)

1. Rostovskiy gosudarstvennyy universitet imeni V.M. Molotova. (Rostov Province--Raccoon dogs)

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3

KRITSKAYA, T. I.

KRITSKAYA, T. I.: "Rodents of the Don-Tsimlyansk massif, their economic significance, and the struggle against them." Rostov na Donu State U imeni V. M. Molotov. Rostov na Donu, 1956. (Dissertation for the Degree of Candidate in Biological Sciences).

Source: Knizhnaya letopis' No. 28 1956 Moscow

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3

KRITSKAYA, T.I.

Significance of the raccoon dog in the biocoenosis of the Manych Steppe. Zool. zhur. 40 no.5:788-790 '61. (MIRA 14:5)

1. Department of Vertebrate Zoology, Rostov-on-Don State University.
(Manych Depression--Raccoon dog)
(Animals, Food habit of)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3

KRITSKAYA, T.I.

Shrews in Rostov Province. Nauch.dokl.vys.shkoly; biol.nauki no.4:46-49 '62. (MIRA 15:10)

1. Rekomendovana kafedroy zoologii pozvonochnykh Rostovskogo-na-Donu gosudarstvennogo universiteta.
(ROSTOV PROVINCE--SHREWS)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3

KRITSKAYA, T.I.

Discovery of the brown field mouse Clethrionomys glareolus istericus Müll. in Rostov Province. Zool. zhur. 41 no.6: 956-957 Je '62. (MIRA 15:7)

1. Department of Vertebrate Zoology, State University of Rostov. (Rostov Province—Field mice)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3

KRITSKAYA, V.A.

IL'INA, V.A.; KRITSKAYA, V.A., kand.fiz.-mat.nauk

Binding energy and static lattice distortions in alloyed ferrite. Probl. metalloved. i fiz. met. no.4:412-418 '55. (MIRA 11:4)
(Iron alloys--Metallography)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3

KRITSKAYA, V. K.

"Yension Relief in Case Iron Rings in the Process of Annealing," Zhur. Tekh. Fiz., 14, Nos. 1-2, 1944

Dnepropetrovsk Physico-Tech. Inst.

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3

KRITSKAYA, V. K., GUBCHEVSKIY, P. V., SOKOLOV, N. A., SOBOLEVSKIY, I. A., AKSENOV, G. I., and TAGUNOVA, T. V.

"Production of Autofrettaged Ingot Molds from Conversion Pig Iron of the First Smelting," Stal', No. 5, pp 363-67, 1945.

Evaluation B-59660

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3

Cu

Distribution of the electron density in the lattice of metallic copper. V. K. Kritskaya and B. M. Rovinskii. *Zhur. Eksper. Teoret. Fiz.* (*J. Exptl. Theoret. Phys.*) 18, 785-9(1948); cf. Agaev and Agarva, *C.A.* 43, 31g.—The error involved in the method of calcg. the electron d. ρ by the three-dimensional Fourier series at a "calcn. temp." higher than the temp. at which the at. scattering factor was detd. (Grimm, Brill, Hermann, and Peters, *Naturwissenschaften* 32, 32(1944); *C.A.* 38, 467°; 11, *C.A.* 38, 1607°), in order to obtain better convergence, is evaluated by calcns. on Cu, with 29 and with 28 electrons; in the latter case, ρ should be, correctly, zero. Actually, one finds, in the direction [100], at the calcn. temps. of 2500, 2000, and 1500°, resp., ρ = 0.174, 0.149, and 0.086 electrons per cu. A. These data measure the error committed at the given calcn. temps. For Cu, with 29 electrons, the true ρ in the interatomic space = 0.085 electrons/cu. A., corresponding to one free electron per atom. The effect of the higher calcn. temp. is illustrated by data showing that the max. ρ, near the lattice points, falls sharply with rising temp., whereas the low ρ values at a distance from the lattice points increase slowly.

N. Thon

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3

Kritskaya V.K.

AKSENOV, G.I., prof; KRITSKAYA, V.K., kand.fiz.-mat.nauk; SOBOLEVSKIY, I.A.; TAGUNOVA, T.V.

New method of measuring heat stresses on metalwork surfaces. Probl. metalloved.i fiz. met. no.[1]:344-345 '49. (MIRA 11:4)

1.Laboratoriy a napryazheniy TSentral'nogo nauchno-issledovatel'skogo instituta chernoy metallurgii.
(Metals, Effect of temperature on)
(Surfaces)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3

KRITSKAYA, V.K.

IL'INA, V.A.; KRITSKAYA, V.K., kand. fiz.-mat. nauk; KURDYUMOV, G.V.

Distorted lattices in deformed metals and solid solutions. Probl. metalloved. i fiz. met. no.2:222-231 '51. (MIRA 11:4)

1. Chlen-korrespondent AN SSSR (for Kurdyumov).
(Crystal lattices) (Deformations (Mechanics))

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3

USSR/Metallurgy - Steel, X-Ray Analysis 1 Aug 52

PA 227T32

"Causes for Decrease in the Intensity of Martensite X-Ray Interferences," V.A. Il'ina, V.K. Kritskaya, G.V. Kurdyumov, Corr Mem, Acad Sci USSR, Inst of Metallography and Metal Phys of TsNIIChM

"Dok Ak Nauk SSSR" Vol 85, No 4, pp 773-775

Studies character of distortions of martensite crystal lattice by measuring intensities of X-ray diffraction of hardened steel with 0.35 and 0.41% C at 2 temps: +23° and -185°.

227T32

Establishes that martensite lattice is characterized by considerable stresses of 3rd kind, i.e., considerable displacement of oscillation centers of atoms. Presence of C in soln causes considerable increase in amplitude of thermal oscillations and leads to weakening of interactomic bond in comparison to lattice of alpha-iron.

Evaluation B-82533

227T32

KRITSKAYA, V. K.

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3

PA 239T67

USSR/Metallurgy - Steel, X-Ray Analysis Aug 52

"Anisotropy in Distortions of Martensite Crystal Lattice," V. A. Il'ina, V. K. Kristskaya, and G. V. Kurdyumov, Corr Mem, Acad Sci USSR, Inst of Metallography and Metal Physics of TsNIIChM

"DAN SSSR" Vol 85, No 5, pp 997-999

Investigates decrease in intensity of spectrum lines for martensite in high-carbon steel, with 1.3% C, hardened from 1,150°C. Intensities of x-ray reflections were detd at temps of +22° and -185°. Establishes that weakening of lines

239T67

011, 002, and 112 is caused by distortions having character of static shifts of atoms from nodes of lattice in direction of [001]. Anisotropy of heat variations shows no noticeable effect.

239T67

KRISTSKAYA, V. K.

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3

Metallography & Primary Structure 101

1200* Anisotropic Distortion of the Crystalline Lattice of Martensite. (Russian.) V. A. Il'ina, V. K. Kritskaia, and G. V. Kurdiumov. *Doklady Akademii Nauk SSSR*, v. 85, Aug. 11, 1952, p. 997-999.

1.37-C steel was used for x-ray diffraction studies of the above. Data are discussed.

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3

KRITSKAYA, V. K.

PA 245T22

USSR/Metallurgy - X-Ray Analysis, Iron 11 Nov 52

"Investigation of Changes in the Intensity of X-Ray Interferences of Deformed Iron," V. A. Il'ina, V. K. Kritskaya, Inst of Metallography and Physics of Metals, TsNIIChM

"Dok Ak Nauk SSSR" Vol 87, No 2, pp 207-210

Discusses results of measuring intensities of X-ray interferences of deformed and undeformed iron in Mo-emission at room temp, concluding that there is reduction in intensity of deformed iron in comparison with intensity of undistorted metal. This conclusion

245T22

is contradictory to data published by B. L. Averbach (J. of Metals, No 8, p 491, 1949), whose findings are disputed by authors. Submitted by Acad I. P. Bardin 12 Sep 52.

245T22

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3

Problems of Metallurgy. Academy of Sciences of the U.S.S.R., Moscow, 1953. Influence of Carbon & Fonding [illegible] Strength in the Martensite Lattice/ [illegible]

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3

Effect of carbon on strength of the bond in the lattice of martensite. G. V. Kurdyumov, V. K. Kritskaya, and N. M. Nodia. *Problemy Met., Moscow: Izdatel. Akad. Nauk S.S.S.R., Sbornik* 1953, 117-20; *Referat. Zhur., Fiz.* 1955, No. 4777.—A method of measuring the relative intensities of reflection at 2 temps. was used. This made it possible to appraise the alteration in the lattice quantitatively and to establish that the presence of dissolved atoms weakens interat. bonds. Steel with a C content of 0.08 to 1.0% was studied. In such tempered steel, the characteristic temp. (θ) corresponds to 430° and practically does not differ from that for tempered α-Fe. With an increase in the C content, a decrease in θ is observed.

Marjorie Ketner

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3

KRITSKAYA, V. K.

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3

KRITSKAYA, V.K.

USSR/Minerals - X-ray analysis

Card 1/1 : Pub. 22 - 16/44

Authors : Kritskaya, V. K.; Kurdyumov, G. B., academician; and Stelletskaya, T. I.

Title : Effect of chromium on the coupling forces of the crystals of α-iron

Periodical : Dok. AN SSSR 98/1, 63-68, Sep 1, 1954

Abstract : Effect of chromium on the bond forces in the α-iron crystals was studied experimentally. The experiments were conducted with the help of X-rays. Some results are shown on a diagram and tables. Four references (1951-1953).

Institution : Institute of Metallurgy and Physics of Metals of the Central Scientific Research Institute of the Pure Metals (TsNIIChM).

Submitted : .....

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3

Category : USSR/Solid State Physics - Structural crystallography E-3

Abs Jour : Ref Zhur - Fizika, No 1, 1957, No 1073

Author : Kurdyumov, G.V., Il'ina, V.A., Kritskaya, V.K., Lysak, S.I.
Title : X-ray Diffraction Investigation of the Strains and Binding Forces in the Crystal Lattice of Metals and Alloys

Orig Pub : Probl. metalloved. i fiz. metallov, sb. 4, 1955, 339-359

Abstract : Extensive experimental material is reported on the study of x-ray diffraction of strains and interatomic-interaction forces in the crystal lattice of metals and alloys. The characteristic features of the live crystalline structure of metals and alloys in strengthened state are examined. An analysis is made of metals for determining the various changes in the fine crystalline structure and of the properties of the crystals in the micro regions. Bibliography, 28 titles.

Card : 1/1

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3

USSR / Physical Chemistry. Crystals. B-5

Abs Jour : Ref Zhur - Khimiya, No 7, 1957, No 22119

Author : V.A. Il'ina, V.K. Krizkaya
Inst : Not given
Orig Pub : Probl. metallovedeniya, fiz. metallov, sb. 4, 1955, 399-401

Title : Roentgenographic Determination of the Characteristic Temperature of Chromium, Nickel and Molibdenum

Abstract : Relative intensities of X-ray reflections from crystallographic facets (211) and (510) for Cr and Mo and (III) and (333) for Ni are measured on roentgenograms obtained by exposure at a temperature plus 20 and minus 185°. The characteristic temperature θ and the mean square amplitude of thermal variations $\sqrt{\bar{U}^2}$ were established in accordance with the change in the thermal factor of intensity. θ for Ni, Cr and Mo is respectively equal to

Card 1/2

USSR / Physical Chemistry. Crystals. B-5

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005

Abs Jour : Ref Zhur - Khimiya, No 7, 1957, No 22119

Abstract : 350, 580 and 400°, and $\sqrt{\bar{U}^2}$ at 23° is 0.137, 0.089, and 0.094 0.094 A. The conclusion is drawn that the forces of interatomic ties in crystals of Ni are much weaker than those of Cr and Mo. Data from other sources on melting temperatures, on diffusion coefficients, and others correspond to the values of 0 obtained for Ni and Mo. The value of θ obtained for Cr is too high.

Card 2/2

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3

KRITSKAYA, V.K.

IL'INA, V.A.; KRITSKAYA, V.K., kand.fiz.-mat.nauk

Investigating the regularity of intensity changes of X-ray interference in deformed iron. Probl. metalloved. i fiz. met. no.4:425-431 '55. (MIRA 11:4)

(Iron--Metallography)
(X rays--Industrial applications)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3

KRITSKAYA, V.K.

KURDYUMOV, G.V., akademik; KRITSKAYA, V.K., kand.fiz.-mat.nauk; NODIA, N.M., kand.fiz.-mat.nauk.

Effect of carbon on binding energy and static distortion in crystals of martensite. Probl. metalloved. i fiz. met. no.4:455-460 '55. (MIRA 11:4)
(Crystal lattices) (Martensite)
(Carbon)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3

GOLUBKOV, V.M.; KRITSKAYA, V.K., kand.fiz.-mat.nauk

X-ray investigation of the carbide phase in patented steel wire.
Probl. metalloved. i fiz. met. no.4:461-464 '55. (MIRA 11:4)
(Wire) (X rays--Industrial applications)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3

USSR/Physics - Distortion FD-3032

Card 1/2 Pub. 153 - 1/23

Author : Kritskaya, V. K.; Kurdyumov, G. V.; Nodia, N. M.

Title : Binding forces and distortions in martensite crystals

Periodical : Zhur. tekh. fiz., 25, February 1955, 177-181

Abstract : The essence of tempering of steel consists in the formation of supersaturated solid solution of carbon in the alpha phase (martensite) as a result of diffusionless conversion of austenite, the considerable change in the steel's properties as a result of tempering being due mainly to those changes in the state of the alpha-phase lattice which cause the presence in it of carbon atoms distributed among the iron atoms; therefore for an understanding of the nature of the properties of martensite and their variations in the annealing process it is important to know the characteristics of the structure of its lattice, hence binding forces and distortions. The authors conclude that the great resistence of martensite crystals to plastic deformation cannot be due to variation in the binding forces in the lattice, since it is not only not higher than in alpha-iron crystals but even significantly lower; and that

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Card 2/2

FD-3032

: the cause for the high elastic limit of deformation in annealed steel is the greater static distortion of the martensite lattice caused by the presence of carbon atoms dissolved in it. Nine references.

Institution : --

Submitted : July 19, 1954

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3

KRITSKAYA, V.K.

USSR/ Physics - Metallurgy

Card 1/1 Pub. 22 - 18/50

Authors : Ll'ina, V.A., and Kritskaya, V. K.

Title : Coupling forces and static distortions in the crystals of alloyed ferrites

Periodical : DOK. AN SSSR 100/1, 69-72, Jan. 1, 1955

Abstract : Experiments were conducted to determine the effect of alloying elements on the coupling forces of alloyed ferrite crystals (lattices). The method of measuring the thermal factor of the intensity of X-ray interferences was used. The results are presented in graphs and tables. Eight USSR references (1952-1954). Tables; graphs.

Institution: Institute of Metallography and Physics of Metals of the TsNIIChM (Central Scientific Research Institute of Ferrous Metals.)

Presented by: Academician G. V. Kurdyumov, July 26, 1954

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3

Kritskaya, V.K.

USSR/Physics

Card 1/1 Pub. 22 - 21/59

Authors : Kritskaya, V. K.; Kurdyumov, G. V., Academician; and Tikhonov, L. V.

Title : Effect of machining on the coupling forces in the crystals of an solid solution of iron-nickel alloy

Periodical : Dok. AN SSSR 102/2, 271-274, May 11, 1955

Abstract : Studies are described of the harding and tempering effect on the coupling forces of the plastic deforation of iron-nickel alloys of the following compound: 4% Ni; 0.015% C; 0.04% Si, and 0.001% P. Intensities of the Spectral lines were studies. Fourteen USSR references (1951-1955). Diagram; table.

Institution : Central Scientific Research Institute of Ferrous Metals, Institute of Metallography and Physics of Metals

Submitted : February 23, 1955

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3

IL'INA, V. A. KRICKAJA, V. K.

SUBJECT USSR / PHYSICS CARD 1 / 2 PA - 1861
AUTHOR IL'INA, V.A., KRICKAJA, V.K.
TITLE The Determination of the Static Distortions of a Crystal Grid by using X-Rays of Different Wavelengths.
PERIODICAL Dokl.Akad.Nauk, 110, fasc.5, 765-768 (1956)
Issued: 12 / 1956

For the study of the influence exercised by the hardness (wavelength) of radiation on the results of the determination of these distortions $\sqrt{\overline{u^2_{st}}}$ the authors used four different roentgen radiations: molybdenum-, cobalt-, and chromium radiations. As test objects they used samples of deformed α-iron and of an α-firm (?) solution of iron with 0,8% Nb. The distortions of the third type in iron were determined according to plastic deformation, and the static deformations of the solid solution were determined in the alloy Fe-Nb. The samples were produced from filed powders. The powder of the Fe-Nb alloy was heated to a temperature of 800° for two hours before the X-ray picture was taken. The static distortions were determined by measuring the intensities of numerous reflections (from $\sum h_i^2 = 2$ to $\sum h_i^2 = 62$). The formulae for the computation of $\overline{u^2}$ were given. A diagram shows the dependence of $\lg(\alpha_1/\alpha_2)$ on the order of the reflection for the investigated substances, iron, and Fe-Nb alloy. In the case of deformed iron it holds here that: $\alpha_1/\alpha_2 = \alpha_{deform.iron}/\alpha_{not\ deform.iron}$, and in the case of the Fe-Nb alloy:

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3

Dokl.Akad.Nauk,110,fasc.5, 765-768 (1956) CARD 2 / 2 PA - 1861

$\alpha_1/\alpha_2 = \alpha_{\text{firm solution}}/\alpha_{\text{not deform.iron}}$. In this connection $\alpha = J_{h_1k_1l_1}/J_{h_2k_2l_2}$. The curves passing through points found by molybdenum radiation have a much lower inclination in deformed iron and in the Fe-Nb alloy than the straight lines passing through the points obtained by great wavelength (K_α-Co, K_α - Fe, K_α - Cr). The values of $\sqrt{\overline{u^2_{st}}}$ computed from these data for deformed iron and the solid solution Fe-Nb are shown in a table and are compared with results previously obtained by the authors for chilled carboniferous steel. According to the experimental data obtained the determination of static distortions in soft roentgen radiation furnishes within the limits of measuring accuracy equal values of $\sqrt{\overline{u^2_{st}}}$ which are considerably higher than those obtained in molybdenum radiation.

Further, the authors studied the influence exercised by the different hardness of the radiation on the dynamic distortions of a crystal lattice (or on the characteristic temperature) in silver and aluminium in molybdenum- and cobalt radiation at room temperature and at the temperature of liquid nitrogen. According to the results obtained the average quadratic amplitudes of thermal oscillations and the characteristic temperatures determined by measuring intensity at two temperatures have equal values.

INSTITUTION: Institute for Metallurgy and Physics of Metals of the Central Scientific Research Institute for Iron Metallurgy.

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3

126-3-5/34

AUTHORS: Il'ina, V.A., Kritskaya, V.K. Kurdyumov, G.V., Osip'yan, Yu.A. and Stelletskaya, T. I.

TITLE: Study of the dependence of the bond forces on the state of crystals in metals and solid solutions. (Izucheniye zavisimosti sil svyazi ot sostoyaniya kristallov v metallakh i tverdykh rastvorakh).

PERIODICAL: "Fizika Metallov i Metallovedeniye" (Physics of Metals and Metallurgy), 1957, Vol.IV, No.3, pp.417-431 (U.S.S.R.)

ABSTRACT: Numerous studies revealed that the interatomic bond forces in a metallic crystal lattice can be influenced by alloying. Depending on the nature of the alloying element, the bond forces can be increased or decreased. Earlier work of the authors (3) and of Iveronova, V.I. and Katsnel'son, A.A.(4) have shown that the concentration of the alloying component is also of great importance, the heat treatment and plastic deformation was also found to influence the characteristic temperature of the solid solution (2,3,5,6). In recent years a considerable amount of work has been published inside and outside the Soviet Union in which anomalies are reported in the changes of certain properties as a result of heat treatment and deformation of numerous solid solutions. On the basis of experimental data of various authors it can

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3

126-3-5/34

Study of the dependence of the bond forces on the state of crystals in metals and solid solutions. (Cont.)

be considered as an established fact that certain properties of the solid solution can be changed appreciably by heat treatment and deformation without any change occurring in the chemical composition of the investigated phase; this phenomenon (change in the characteristic temperatures, electrical resistance anomalies, change of the lattice period etc.) was detected only in solid solutions but not in pure metals. Analysis of results of other authors permits the assumption that the anomalies in the properties observed by various authors can be attributed to a general cause and are the result of the same process taking place inside very small volumes of the crystal lattice of the solid solution. The most likely assumption is that the observed anomalies in the properties are due to changes in the distribution of the atoms in the lattice of the solid solution and on that numerous authors are in agreement but, on the other hand, various authors disagree on the character of the redistribution of the atoms inside the solid and on the nature of this phenomenon; however, there is no direct confirmation of this assumption and the problem requires further study. In the here described work the

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"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000826520005-3

126-3-5/34

Study of the dependence of the bond forces on the state of crystals in metals and solid solutions. (Cont.)

influence was investigated of differing treatments on the interatomic interaction in crystals of solid solutions and of some high melting point metals and the influence was studied of the plastic deformation and heat treatment on the bond forces. The investigations were effected by X-ray methods and by measuring the resonance frequency of the longitudinal elastic oscillations (determination of the modulus of elasticity). The investigations were carried out on iron alloyed with chromium, manganese, W, Ni, Ti and also on pure Cr, W and Ta. For melting the metals a 50 kg capacity high frequency furnace was used and the material was cast into 25 kg ingots. The ingots were subjected to diffusion annealing at 1200 C and then forged into a square of 40 x 40 mm cross section and into rods of 15 mm dia. Forging was begun at 1000 to 1100 C and, after forging, the material was cold rolled with a total reduction of 62.5%, the specimens for determining the modulus of elasticity were cut from the rolled strip in the direction of rolling and were 100 mm long and 10 mm dia. The chemical analyses of eight of the investigated melts are given in Table 1, p 419. The results are described in some detail which were obtained

Card 3/5

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