

Study of the intensity of α -ray ... S/126/62/013/001/013/018
E091/E580

counter did not show any difference between annealed and cold worked α -iron. A comparison of diffraction lines obtained by the photographic method and by using a scintillation counter showed that they differ mainly in their ratio between line intensity and background intensity. In the second case, this ratio is considerably greater; this permits the measurement of the intensity of diffuse lines with a greater accuracy. Hence, a fairly reliable measurement of the intensity of reflections of higher orders becomes possible. There are 3 figures.

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

SUBMITTED: September 1, 1951

Card 2/2

L 12607-63

EWT(1)/EWG(k)/BDS/EEC(b)-2 AFFTC/ASD/ESD-3 P1-4/

Pz-7 AT/IJP(C)/JT

ACCESSION NR: AP3001615

S/0030/63/000/005/0007/0019

69

AUTHOR: Kurdyumov, G. V. (Academician); Casp'yan, Yu. A. (Candidate of Physical and Mathematical Sciences)

TITLE: Some aims and goals in the study of solid-state physics 21

SOURCE: AN SSSR. Vestnik, no. 5, 1963, 7-19

TOPIC TAGS: electronic structure, crystal formation, magnetic phenomenon, high pressure

ABSTRACT: The Academy of Sciences is undertaking extensive reorganizations of the institutes concerned with solid-state physics. These are to deal with the extraordinary increase in the scope of this science, particularly in the fields of microwave spectroscopy, quantum microwave electronics, magnetic and structural neutron diffraction analysis, semiconductors, low-temperature physics, spectroscopy, and the phenomenological mechanics of strength and plasticity. Soviet science must make an increased effort to study the following: 1) the electronic structure of solid states, emphasizing the energy structure of the electronic spectrum in solid states; 2) the influence of inclusions and defects in the crystal structure on solid-state properties; 3) crystal formation, where the study, aided by chemistry

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ACCESSION NR: AP3001615

and mineralogy, falls into two main groups: (a)-theoretical and experimental studies of the genesis and growth of natural crystals, and (b)-their synthetic production; 4) the physics of magnetic phenomena--of importance in geophysics and still poorly understood; 5) solid-state physics at high pressures, and 6) the physics of strength, concerned, among other things, with the effect produced by high-energy radiation on solid-state structures and their properties. The Presidium of the Academy of Sciences, SSSR, strongly supports these endeavors and solicits the help of the various chemical institutes. It has long been evident that the Academy needs a special design office and an experimental station to produce special equipment for the study of solid-state physics. The lack of specialists and technicians in this field is drawn to the attention of all concerned.

ASSOCIATION: none

SUBMITTED: 00

DATE ACQ: 21Jun63

ENCL: 00

SUB CODE: 00

NO REF SOV: 001

OTHER: 000

Card 2/2

KARDONSKIY, V.M.; KURDYUMOV, G.V.; PERKAS, M.D.

Fine crystal structure of cold-deformed, high-carbon steel.

Fiz. met. i metalloved. 15 no.2:244-253 F '63.

(MIRA 16:4)

1. Institut metallofiziki Tsentral'nogo nauchno-issledovatel'skogo instituta chernoy metallurgii.

(Steel—Metallography)

(Crystal lattices)

KURDYUMOV, G.V., akademik; OSIP'YAN, Yu.A., kand. fiz.-matem. nauk

Some results and future prospects of solid state physics.
Vest. AN SSSR 33 no.5:7-19 My '63. (MIRA 16:6)

(Physics)

ACCESSION NR: AP4012426

S/0129/64/000/002/0002/0008

AUTHORS: Kardonskiy, V. M.; Kurdyumov, G. V.; Perkas, M. D.

TITLE: Influence of size and form of cementite particles on structure and properties of steel after deformation

SOURCE: Metalloved. i term. obrab. metallov, no. 2, 1964, 2-8, plus insert bet. pp. 24 & 25

TOPIC TAGS: steel properties, cementite particles plastic flow, lamellar cementite, cementite, cementite crystal

ABSTRACT: The purpose of the present work is to study the influence of cementite form (lamellar or globular) on the formation of the fine steel structure during plastic flow (including dislocation). Steels with a carbon content of 0.1, 0.4 and 1% were studied. After various degrees of deformation the steel structure was studied by X-ray and electron-microscope methods. After deformation, the shape of the cementite substantially influences the structure of steel and its mechanical properties. During plastic flow of steel with globular cementite, the fine structure of ferrite is similar to the

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ACCESSION NR: AP4012426

structure of deformed carbon-free iron, and their dislocation structures are similar. The shape, size, and internal structure of cementite crystals are only slightly changed in the process of plastic flow. It was determined that the work hardening of steel during deformation is not related to carbon content and corresponds to the increase in strength of carbon-free iron. Lamellar, unlike globular cementite, contributes to the derivation of a more dispersed ferrite substructure during deformation. Plastic flow of cementite crystals also occurs, resulting in the formation of a fine structure. Most of the eutectoid grains are crushed in the deformation process, with lamination disappearing. In those areas where lamination is maintained, there is a thinning of cementite crystals and a decrease in inter-lamellar spacing. The effect is more clearly expressed than the dispersed eutectoid before deformation. Increased eutectoid dispersion contributes to the derivation of a more developed fine structure of ferrite and cementite. Orig. art. has: 8 Figures, 1 Table.

ASSOCIATION: TsNIICHM

Card

2/3

ACCESSION NR: AP4012426

SUBMITTED: 00

DATE ACQ: 03Mar64

ENCL: 00

SUB CODE: ML

NR REF SOV: 005

OTHER: 003

Card 3/3

I, 4002-66 SMT(m)/T/BWF(t)/ETL/EMT(k) LNF(c) JD/BN

ACC NR: AR6017263

SOURCE CODE: UR/0058/000/012/E065/E065

AUTHOR: Kurdyumov, G. V.

41
13

TITLE: Hardened state of metals

SOURCE: Ref. zh. Fizika, Abs. 12E508

REF SOURCE: Sb. otr. In-t metalloved. i fiz. metallov Tsentr. n.-i in-ta chernoy metallurgii, vyp. 36, 1964, 7-27

TOPIC TAGS: metal hardening, steel structure, plastic deformation, alloy steel, martensitic transformation, austenite

ABSTRACT: The article summarizes the results of research on the nature of the hardened state. The following questions are considered: 1) hardening of steel by quenching; 2) hardening of pure metals and single-phase solid solutions; 3) hardening of steel under plastic deformation; 4) the same under thermomechanical working in the case of alloyed steel; 5) hardening as a result of a martensitic transformation followed by aging in the case of carbon-free alloys of iron; 6) hardening of austenite of carbon-free alloys. Bibliography, 39 titles.
[Translation of abstract]

SUB CODE: 11

Card 1/1

RUSSIAN, G. V.

Crack behavior in hardened steel. Metalloved. i term. obr. met.
no. 8:3-3 Ag '65. (MIRA 18:9)

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

L 9234-66 EWT(n)/EPE(n)-2/T/EWP(t)/EWP(b)/EWA(h)/EWA(c) GE/JD/GS
 ACC NR: AT5023793 SOURCE CODE: UR/0000/62/000/000/0160/0167

AUTHOR: Batenin, I. V.; Il'ina, V. A.; Kritskaya, V. K.; Kurdyumov, G. V.;
Sharev, B. V. 55 55 55 55

ORG: none

TITLE: Investigation of the effect of neutron on the fine crystalline structure and properties of metals and alloys

SOURCE: Soveshchaniye po probleme Deystviye yadernykh izlucheniya na materialy. Moscow, 1960. Deystviye yadernykh izlucheniya na materialy (The effect of nuclear radiation on materials); doklady soveshchaniya. Moscow, Izd-vo AN SSSR, 1962, 160-167 55, 16

TOPIC TAGS: copper, iron, chromium, iron alloy, nickel containing alloy, chromium containing alloy, tungsten containing alloy, metal structure, alloy structure, neutron irradiation, irradiation effect

ABSTRACT: Copper, iron, and chromium annealed at 400, 600, and 900C, respectively, and ⁵⁹Fe-Ni, ⁵⁹Fe-Cr, and Fe-W alloys annealed at 600, 600, and 650C, respectively, were irradiated with an integrated neutron flux of about 10^{20} and 10^{21} n/cm² at 80C. Irradiation caused a noticeable widening of interference x-ray lines in copper and iron resulting from fragmentation of coherent portions of the crystalline lattice (block) (5×10^{-6} and 8×10^{-6} cm in copper and iron, respectively) and from the presence of elastic microdeformations (1×10^{-3} and 0.65×10^{-3} in copper and

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I. 9234-66

ACC NR: AT5023793

iron, respectively). In the Fe-Ni alloy the widening of interference lines was much smaller, and none was observed in chromium and in the Fe-Cr and Fe-W alloys. Irradiation increased the microhardness of all the investigated metals and alloys; the increase varied for different metals and grew larger as flux density increased from 10^{20} to 10^{21} n/cm². The microhardness of the irradiated Fe-W alloy practically did not increase with a cold deformation of up to 60—70 deg, while that of the unirradiated alloy increased significantly with deformation, regardless of its magnitude. In the irradiated and unirradiated Fe-Ni alloy the changes in microhardness with cold plastic deformation were practically identical. The initial difference (ΔH_{45} units) in the microhardness of the irradiated and unirradiated Fe-Ni alloy practically disappeared with a 30—40-deg cold deformation, after which the changes in microhardness followed a conventional course. A similar pattern was observed for irradiated and unirradiated chromium, except that the initial difference (ΔH) was 30 units and it decreased to zero after a 70—80 deg deformation. Investigation of the dependence of the microhardness on the annealing temperature showed that the nature of the crystal lattice defects created by plastic deformation differed substantially from the nature of the defects created by neutron irradiation. The former were much more stable; hence, weakening of irradiated metals began at appreciably lower annealing temperatures. Orig art. has: 15 figures. [MS]

SUB CODE: 11, 20/ SUBM DATE: 18Aug62/ ORIG:REF: 001

Card ^{OC} 2/2

L 00850-66 ENT(m)/T/EMP(t)/EMP(b)/EWA(c) INP c) JD

ACCESSION NR: AP5020702

UR/0129/65/000/008/0003/0008
669.15

43
34
10

AUTHOR: Kurdyumov, G. V. 44, 55

TITLE: Behavior of carbon in hardened steel

SOURCE: Metallovedeniye i termicheskaya obrabotka metallov, no. 8, 1965, 3-8

TOPIC TAGS: carbon behavior, hardened steel, martensite transformation, supersaturated solid solution, carbon segregation, Epsilon carbide, Alpha iron, face centered lattice, body centered lattice, dissolved carbon, tetragonal martensite lattice

ABSTRACT: As a result of the rapid change from a face-centered to a body-centered iron lattice, occurring in the presence of a martensitic mechanism of austenite transformation, the entire carbon dissolved in the austenite is retained in the solid solution and in the martensite. In this strongly supersaturated solid solution, immediately after its formation, processes of carbon segregation begin to take place. The rate of this process is largely a function of temperature. In the presence of a high initial temperature of martensite formation M_1 these processes may occur to a marked extent as early as during the cooling involved in hardening the steel. This may account for the fact that the roentgenograms of simple carbon steels containing less than 0.6% C do not show the split lines characteristic of the tetragonal lattice of martensite. Studies of hardened steel and

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L 00850-66

ACCESSION NR: AP5020702

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of the processes occurring in martensite during heating have so far paid little attention to the effect of defects of the crystalline structure on the behavior of dissolved carbon. On the basis of a literature survey and his own experiments, the author concludes that the carbon in neutron-irradiated iron gets segregated at temperatures as low as 50°C; no intermediate ϵ -carbide is observed, and cementite forms in the region of ~250°C. Thus it may be assumed that in irradiated iron the C atoms in the region of ~50°C are absorbed by the vacant sites. A calorimetric investigation has shown that the bonding energy between the C atom and the vacant site exceeds its bonding energy in ϵ -carbide: this accounts for the failure of ϵ -carbide to form in irradiated iron. The transition of the tetragonal martensite lattice to a lattice close to the lattice of α -iron, observed at room temperatures particularly in nickel steels, is attributable to the decay of martensite and segregation of ϵ -carbide, the migration of C atoms to the defects of the crystalline lattice of martensite (dislocations, vacant sites, boundaries between twins), and the transition of the ordered alignment of C atoms in the solid solution to a disordered alignment. Further investigations are still needed in order to solve the question of the nature of the transformation of tetragonal martensite. This is of major practical importance considering that the tempering processes could then be varied according to the state of carbon in the martensite prior to tempering. In

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I. 00850-66

ACCESSION NR: AP5020702

3

particular, the prior plastic deformation of martensite, leading to its major structural changes, results in higher strength properties on subsequent tempering. Orig. art. has: 1 photo.

ASSOCIATION: TsNIICHERMET 44.55

SUBMITTED: 00

ENCL: 00

SUB CODE: MM, 55

NR REF SOV: 014

OTHER: 007

Card

3/3

1. 1291-05 EWP(k)/EWP(z)/EWA(c)/EWT(a)/EWP(h) EWA(t) EWT(v) EWP(w) EWT(x)
 HW 13
 ATU011200
 07/0327

Author: Kurdyumov, G. V.

Title: The hardened state of metals
 Institute: Neprorabovsk. Institute metallography and metallurgy
 metal hardening, steel
 effect, high energy

The first subject investigated is the hardening of steel
 hardened all samples... about
 cooled to different temperatures...
 content. Mechanical properties were investigated between

Card 1/3

AT9011220

The dependence of hardness on deformation is determined as a function of martensite content. High deformation of the hardened steel leads to an increase in hardness.

Irradiation with high energy particles is also studied. The most investigated is hardening of steel.

Transformation in these alloys takes place above 500°C, an increase in hardness is obviously connected with diffusion processes in the

Card 2/3

L 51991-65

ADMISSION NR: AT5011200

distribution of the dissolved atoms and the creation of a region
of enriched concentration of atoms of the same element

ASSOCIATION: Institut metallovedeniya i fiziki metalov, Leningrad
Institute of Physical Metallurgy and Physics of Metals

ENCLOSURE: 10
OTHER: 010

308
Card 3/3

TSYGANOV, R.Ya.; ULAZOVSKIY, V.A., red.; TOKIN, A.N., red.;
KADIL'NIKOVA, A.F., red.; KURDYUKOV, G.V., red.; KOVRIN,
Ye.I., red.; BARANSKIY, A.V., red.

[Introducing new equipment and the achievements of science into industry] Vnedrenie novoi tekhniki i dostizhenii nauki v proizvodstvo. Volgograd, 1963. 215 p.
(MIRA 18:3)

1. Volgograd. Institut inzhenerov gorodskogo khozyaystva.

APPROVED FOR RELEASE: 06/19/2000
S/0020/65/160/003/0588/0589
ACCESSION NR: AP5005888

S/0020/65/160/003/0588/0589

Acader
dependence of the magnetization on the temperature

USSR. Doklady, v. 160, no. 3, 1969, 586-588

keywords: cobalt alloy, temperature dependence, magnetic property, ordered alloy

NR: AP5005888

of a cobalt alloy with 51 at.% platinum in the temperature range
from 17° to the Curie point. The temperature dependence of the

the saturation magnetization of the alloy is shown in Fig. 1. The

at the Curie point of alloys of various compositions. Although
experimental data indicate that the transition is of the second

temperature dependence of the magnetization is shown in Fig. 2.

OF SCIENCES SSSK/

SUBMITTED: 10Jul 4

ENCL: 00

SUB CODE: MM

NR REF SOV: 008

OTHER: 003

Magnetic Alloy

18

Card

3/3

AGEYEV Nikolay Vladimirovich, nagrazhden ordenom Lenina, dvuruya ordenami Trudovogo Krasnogo Znameni, medal'yu za do-
lestnyy trud v Velikoy Otechestvennoy voyne, otv. red.;
KURDYUMOV, G.V., akademik, red.; ODING, I.A., red.
[deceased]; PAVLOV, I.M., red.; ZUBIN, I.F., kand. tekhn.
nauk, red.

[Study of steels and alloys] Issledovaniia staley i splavov. Moskva, Nauka, 1964. 390 p. (MIRA 17:8)

1. Moscow. Institut metallurgii. 2. Chlen-korrespondent AN SSSR (for Odin, Ageyev, Pavlov).

KARDONSKIY, V.M.; KURDYUMOV, G.V.; PERKAS, M.D.

Effect of size and shape of cementite particles on the structure
and properties of steel following deformation. Metalloved. i
term. obr. met. no.2:2-8 F*64 (MIRA 17:7)

1. TSentral'nyy nauchno-issledovatel'skiy institut chernoy
metallurgii imeni Bardina.

ACCESSION NR: AP4041147

S/0020/64/156/004/0795/0798

AUTHOR: Dekhtyar, I. Ya.; Levina, D. A.; Mikhalenikov, V. S. ; Kurdyumov, G. V. (Academician)

TITLE: Annihilation of positron and electrons in plastically deformed spectra

SOURCE: AN SSSR. Doklady*, v. 156, no. 4, 1964, 795-798

TOPIC TAGS: electron positron annihilation spectra, plastically deformed metal, nickel iron alloy, electron energy distribution

ABSTRACT: The authors used the method of electron-positron annihilation in metals for the study of the effect of plastic deformation on electronic structure, since the annihilation spectra gives information about the energy distribution of electrons in metals. The study was conducted on nickel and iron-nickel alloy of invar composition because the physical properties of these metals are determined by the interaction and distribution of d- and s-electrons, and because the contribution of d-electrons to the annihilation spectra is considerable. The method was described by the authors earlier (Voprosy* fiz. met. i metalloved, no. 12, 46 (1961)). The positron source was Na²². The specimen were deformed by rolling to about 75% and were annealed in argon at 950C for 3 hours. The angular distribution

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ACCESSION NR: AP4041147

of gamma-rays was measured with a scintillation counter. In the region of maximum, the annihilation radiation was larger for deformed specimen than for the annealed ones. The results are qualitatively interpreted in terms of the influence of the redistribution of s- and d-electrons in the distorted regions of the crystals around dislocations, and a subsequent redistribution of electronic momenta. Orig. art. has: 1 figure.

ASSOCIATION: Institut metallofiziki, Akademii nauk USSR. (Institute of Physics of Metals, Academy of Sciences USSR)

SUBMITTED: 13Jan64

ENCL: 00

SUB CODE: NP, MM

NO REF SOV: 005

OTHER: 003

Cont 2/2

8/0020/64/156/004/0792/0794

ACCESSION NR: AP4041146

AUTHOR: Alfintsev, G. A.; Ovsiyenko, D. Ye.; Kurdyumov, G. V.

TITLE: Study of the mechanism of growth of gallium crystals from the melt

SOURCE: AN SSSR. Doklady*, v. 156, no. 4, 1964, 792-794

TOPIC TAGS: crystal growth, gallium crystal growth, crystal growth theory, crystallography, deformation effect

ABSTRACT: The purpose of this work was an investigation of the kinetics of gallium crystal growth. The specimen was 0.5 mm thick. Liquid gallium was maintained at a desired constant temperature by means of a ultrathermostat. The growth of the (001) face of the crystal was observed with an MIM-6 microscope. It was found that the rate of growth, at the same amount of undercooling ΔT , is very sensitive to deformation of the primary crystal. If vibrations which lead to deformation of solid gallium are avoided, the crystals did not grow even at a considerable ΔT . For instance, at $\Delta T = 0.480$, no growth was observed during one hour. At $\Delta T = 0.760$, the rate of growth was 1.56×10^{-6} m/sec. At $\Delta T = 0.630$, the growth was 1.28×10^{-6} m/sec. before deformation, and 2×10^{-6} m/sec. after deformation.

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ACCESSION NR: AP4041146

The growth as a function of ΔT is in agreement with the theory of growth by two dimensional nuclei suggested by Volmer et al. (ZS. Phys. Chem. A 154, 97 (1931)). The peripheral energy is computed to be 4.6×10^{-7} erg/cm. Orig. art. has: 3 figures.

ASSOCIATION: IMFANUK

SUBMITTED: 26Jan64

ENCL: 00

SUB CODE: SS

NO REF SOV: 002

OTHER: 004

Card 2/2

TOPOROV, O.; KURDYUMOV, I.I.

Arch-frame livestock barns. Zhivotnovodstvo 21 no.11:66-68 N '59
(MIRA 13:3)

1. Glavnyy inzhener Altayskogo krayevogo proyektного instituta (for Toporov). Nachal'nik otdela sel'skokhozyaystvennogo proyektirovaniya Altayskogo krayevogo proyektного instituta.
(Barns)

ACC NR: AP6019621

(A,N)

SOURCE CODE: UR/00-18/66/030/002/0292/0300

58
55
9

AUTHOR: Kurdyumov, I.V.; El' Samarai, S.Kh.; Smirnov, Yu.F.; Shitikova, K.V.

ORG: none

TITLE: Dipole photoabsorption in ²¹Li-6 /Report, Fifteenth Annual Conference on Nuclear Spectroscopy and Nuclear Structure, held at Minsk, 25 January to 2 February 1965/

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v.30, no. 2, 1966, 292-300

TOPIC TAGS: nuclear reaction, nuclear structure, nuclear shell model, gamma ray absorption, lithium, nuclear energy level,

ABSTRACT: The authors have employed the translation invariant oscillator potential shell model of Yu.F.Smirnov and K.V.Shitikova (Izv. AN SSSR. Ser. Fiz., 27, 1442 (1963)) to calculate the dipole photoabsorption of ⁶Li as well as the cross section for the ⁶Li(γ, n)⁵Li reaction. Excitation probabilities in the ⁶Li(p, 2p)⁶He reaction of odd ⁶He states analogous to the ⁶Li states of interest in connection with the photoabsorption were also calculated by the method of V.V.Balashov and A.N.Boyarkina (Nucl. Phys. 38, 629 (1962)) and K.Dietrich (Phys. Lett., 2, 139 (1962)), and the energies of the ⁶Li states were determined by comparing the ⁶He calculations with experimental data. The photoabsorption calculations were effected by diagonalizing, together with the spin-orbital interaction, the matrix for the residual two-particle interactions,

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ACC NR: AP6019621

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assumed to have a Gaussian radial dependence. The calculations were performed for the two exchange force variants of Serber and Rosenfeld and for several values of the spin-orbital coupling constant. The results did not depend strongly either on the spin-orbital coupling or on the exchange force variant. The energy of one Li^6 state was evaluated as 16.6 MeV by comparing the He^6 calculations with the experimental data of I.P.Garron et al. (Phys. Rev. Lett., 7, 261 (1961)) on the $\text{Li}^7(p,2p)\text{He}^6$ reaction, and three groups of Li^6 photoabsorption levels were found in the 10-12, 16-25, and 31-35 MeV regions. It is concluded that it is possible to locate in a unified way with the aid of the present model all three groups of Li^6 levels that are observed to be excited in dipole photoabsorption. According to the present calculations the only Li^6 levels that can disintegrate into a He^3 nucleus and a triton have energies between 16 and 18 MeV; therefore the conclusion of Ye.D.Makhnovskiy and A.P.Komar (Dokl.AN SSSR, 156, 774 (1964)) that these levels are located in the 21-23 MeV region is doubtful, and further experimental investigation of the photodisintegration of Li^6 is desirable. The authors thank V.V.Balashov, V.G.Heudachin, and N.P.Yudin for discussions and valuable advice. Orig. art. has: 1 formula, 4 figures and 2 tables.

SUB CODE: 20 SUBM DATL: 00 ORIG. REF: 008 OTH REF: 005

Card 2/2 hs

KURDYUMOV, K.P.

Spray gun for lubricating molds in the manufacture of glass
containers. Stek. 1 ker. 13 no.9:29 S '56. (MLJA 9:10)

(Glass manufacture--Equipment and supplies)
(Spraying equipment)

KUDRYUMOV, K. P.

AUTHOR: Kudryumov, K. P.

TITLE: An Improved Conveyor Grid for Annealing Furnaces (Usovershenstvovannaya konveyernaya setka dlya otzhigatel'nykh pechey)

PERIODICAL: Steklo i Keramika, 1957, Vol. 14, No. 1, pp. 26-27 (U.S.S.R.)

ABSTRACT: The proper operation of annealing furnaces in glass plants depends upon the rate of wear of conveyor grids. Due to their erroneous design, the existing grids elongate and narrow down to 800 and 900 mm., instead of to the required 1100 mm., which results in a 20% decrease in production, and the grids have to be replaced every 5 - 6 months. Fig. 1 shows the standard type grid made of 3.0 - 3.5 mm. wire interlaced into loops 600 mm. wide and interconnected with ramrods 3.0 - 3.5 mm. in diameter. Fig. 2 shows a new type grid designed by E. M. Voykhanskiy, I. P. Andreyev, and M. A. Nikitin, employed at the Moscow Mechanical Shops (Rosglavkonserv). This grid, by virtue of its design, will in the opinion of designers eliminate all of the above-mentioned shortcomings. Data obtained from several glass factories using this new

Card 1/2

An Improved Conveyor Grid for Annealing Furnaces

type grid indicate that this grid has been used satisfactorily for over a year without replacement, and has resulted in better performance and efficiency of annealing furnaces as well as a significant saving of metal.

There are no references.

ASSOCIATION:

PRESENTED BY:

SUBMITTED:

AVAILABLE:

Card 2/2

KURDYUKOV, K.P. (Moskva)

Problem of reliability of switching devices. Avtom.1
telem. 21 no.4:533-541 Ap '60. (MIRA 13:6)
(Switching theory)

KURDYUMOV, L. D.

USSR/Engineering - Hydraulics, Water Sources Jun 51

"Structure of Natural Water System," L. D. Kurdyumov, Sec on Sci Study of the Problems of Water Econ, Acad Sci USSR

"Iz Ak Nauk SSSR, Otdel Tekh Nauk" No 6, pp 887-899

Attempts to establish theoretically definite regularities in structure of water systems, express-
ing them by formulas connecting discharges and drainage areas of tributaries. Discusses classification of rivers and effect of physiogeographical factors on structure of water systems. 205711 Jun 51

USSR/Engineering - Hydraulics, Water Sources (Contd)

Demonstrates application of formulas to calculate hydraulic power resources of small water streams. Submitted by Acad A. V. Vinter.

205711

KURDYUMOV, L.D.

SAMOYLOV, I.V., otvetstvennyy red.; KURDYUMOV, L.D., otvetstvennyy red.;
YERMAKOV, M.S., tekhn. red.

[Problems in hydrology] Voprosy gidrologii. [Moskva] 1957. 231 p.
(MIRA 11:7)

1. Moscow. Universitet. Geograficheskiy fakul'tet.
(Hydrology)

KURDYUMOV, G.V.

SMIKOVA, V.I.; ORMONT, B.F.

Structure and homogeneity boundary of tantalum carbides. Dokl. AN SSSR
96 no.3:557-560 My '54. (MLRA 7:6)

1. Fiziko-khimicheskiy institut im. L.Ya.Karpova.
Predstavleno akademikom G.V.Kurdyumovym.
(Tantalum carbide)

GIBSHMAN, Ye.Ye., redaktor; DZHUNKOVSKIY, N.N., redaktor; YEGOROV, P.A.,
inzhener, redaktor; NITROPOL'SKIY, N.M., professor, redaktor;
PUSHTORSKIY, Ye.I., inzhener; ROYER, Ye.N., inzhener;
POLIVANOV, N.I., dotsent; KURDYUMOV, M.D., inzhener;
OSTROVIDOV, A.M., inzhener; KROPOTOV, I.I., inzhener;
VOLKOV, V.P., dotsent.

[Handbook on the planning, construction and operation of
city roads, bridges and hydraulic structures] Spravochnik
po proektirovaniu, stroitel'stvu i ekspluatatsii gorodskikh
dorog, mostov i gidrotekhnicheskikh sooruzhenii. Pod red.
E.E.Gibshman, N.N.Dz'munkovskii, P.A.Egorov. Moskva, Izd-vo
Ministerstva kommunal'nogo khoziaistva RSFSR. Vol. 1.
[Bridges] Mosty. Pod red. N.M.Nitropol'skii, 1953. 984 p.
(MLRA 7:1)

(Bridges) (Tunnels) (Retaining walls)

R. A. Bulava, M.D.
ANUFRIYEV, V.Ye., dotsent, kand.tekhn.nauk; KURDYUMOV, M.D., inzh.,
retsenzent; SMYSLOV, V.V., kand.tekhn.nauk, retsenzent; KOSYURA,
G.G., kand.tekhn.nauk, retsenzent; BULAVA, M.M., dots., retsenzent;
DRAHNIKOV, A.M., doktor geol.-mineralog.nauk, retsenzent; KIRICHKO,
I.M., dotsent, retsenzent; POBEGAYLO, I.M., inzh., retsenzent;
UCHITEL', I.Z., red.; GUROVA, O.A., tekhn.red.

[Hydraulic engineering structures for cities] Gorodskie gidro-
tekhnicheskie sooruzhenia. Moskva, Izd-vo M-va kommun.khoz.,
1957. 264 p. (MIRA 11:7)
(Hydraulic engineering)

ANUFRIYEV, V.Ye., kand. tekhn. nauk; ~~MURDYKIMOV, M.D., spets. red.~~; PROTSENKO,
D.I., red. izd-va; GUBOVA, O.A., tekhn. red.

[Protecting inhabited places from floods] Zashchita naselennykh mest
ot zatopeniia. Moskva, Izd-vo M-va kommun. khoz. RSFSR, 1958. 145 p.
(Flood control) (MIRA 11:7)

ITSKOVICH, M.L., ~~KURDYIMOV, M.D.~~; GEZENTSVEY, L.B., red.; PROTSENKO, D.I.,
red.izd-va., RAKITIN, I.T., tekhn.red.;

[Outside water, sewer, and drainage networks in relation to city streets;
reference manual for contractors] Naruzhnye seti vodoprovoda i kanali-
zatsii, vodostoki i gorodskie dorogi; spravochnoe posobie proizvoditellu
rabot. Moskva, Izd-vo M-va kommun. khoz. RSFSR, 1958. 263 p.(MIRA 11:9)
(Municipal engineering)
(Streets)

BORISOV, Aleksandr Prokof'yevich, kand.ekonom.nauk; CHISTYAKOV, Pavel
Mikhaylovich, inzh.; KURDYUMOV, M.D., red.; UCHITEL', I.Z., red.
izd-va; LELYUKHIN, A.A., tekhn.red.

[Municipal economy in reservoir areas; technical and economic
aspects] Gorodskoe khoziaistvo v zone vodokhranilishch; tekhniko-
ekonomicheskie voprosy. Moskva, Izd-vo M-va kommun.khoz.RSFSR,
1960. 286 p. (MIRA 13:9)

(Reservoirs)

(Flood control)

ITSKOVICH, Mark Leont'yevich; KURDYUMOV, Mikhail Dmitriyevich; GEZENTSVEY,
L.B., red.; BOLOTINA, A.V., red. izd-va; LELYUKHIN, A.A., tekhn. red.

[Underground sewers and water pipes and their relation to municipal
streets] Podzemnye sanitarno-tekhnicheskie kommunikatsii i gorodskie
dorogi; spravochnoe posobie proizvoditeliu rabot. Izd.2., perer. i
dop. Moskva, Izd-vo M-va kommun.khoz.RSFSR, 1961. 286 p.

(MIRA 14:12)

(Sewerage) (Water pipes) (Streets)

GRATSIANSKIY, M.N., kand. tekhn. nauk; KOSTOMAROV, V.M., kand. tekhn. nauk; ALEKSANDROVSKIY, Yu.V., kand. tekhn. nauk; KARAGODIN, V.L., inzh.; KARAGODIN, A.L., inzh.; ANUFRIYEV, V.Ye., kand. tekhn. nauk; KURDYUMOV, M.D., inzh.; DZHUNKOVSKIY, N.N., doktor tekhn. nauk, prof.; ABRAMOV, S.K., kand. tekhn. nauk; KEDROV, V.S., kand. tekhn. nauk; GIBSHMAN, Ye.Ye., prof., red.; YEGOROV, P.A., inzh., red.; VARGANOVA, A.N., red. izd-va; LELYUKHIN, A.A., tekhn. red.

[Manual for the design, construction and operation of urban roads, bridges and hydrotechnical structures] Spravochnik po proektirovaniu, stroitel'stvu i ekspluatatsii gorodskikh dorog, mostov i gidrotekhnicheskikh sooruzhenii. Red. kol. E.E. Gibshan, N.N.Dzhunkovskii, P.A.Egorov. Moskva, Izd-vo M-va kommun.khoz. RSFSR. Vol.2. [Hydrotechnical structures] Gidrotekhnicheskie sooruzheniia. Red. toma: N.N.Dzhunkovskii, M.D.Kurdiumov. 1961. 706 p. (MIRA 15:3)
(Hydraulics) (Hydraulic engineering)

KURDYUMOV, N.

"40 million Americans threatened." Sov.profsoinzy 1 no.4:86-90 D '53,
(United States--Emigration and immigration law) (MLRA 6:12)
gration law--United States)

KURDYUMOV, N.

Awakened volcano. Sov. profsoiuzy 19 no.14:40-42 J1 '63.
(United States--Negroes--Civil rights) (MIRA 16:9)

USSR/Human and Animal Morphology - Normal and Pathological.
Lymphatic System.

S

Abs Jour : Ref Zhur Biol., No 23, 1958, 105964

Author : Kurdyumov, N.A.

Inst : Dagestan Medical Institute

Title : Forms of Lymphatic Connections of the Organs of the
Abdominal Cavity with the Main Lymphatic Collectors
and with the Venous System

Orig Pub : Sb. nauchn. tr. Dagest. med. in-t, 1956, 6, 189-191

Abstract : In 22 cadavers of newborn and fetuses, it was shown
that the efferent lymphatic vessels (ELV) in humans leave
some organs by one route (sex glands), and others by
several routes (liver; the ELV leave it by three routes).
The collector lymph ducts connecting the organs with the
venous system can be of three types:

Card 1/2

- 20 -

USSR/Human and Animal Morphology - Normal and Pathological.
Lymphatic System.

S

Abs Jour : Ref Zhur Biol., No 23, 1958, 105964

1) several (2-8) ELV of an organ flow into one stem, passing into the venous system; 2) one ELV branches out in several (2-8) collector vessels which, then, uniting into one stem, pass into the venous bed; 3) several ELV of the organ unite in one collector vessel, which again subdivides into 2-8 collector vessels and then, after their confluence, one stem is formed which joins the venous system.

Card 2/2

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...differed from the calculations by ...

ACCESSION NR: AT5017686

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41
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1-21

... (Engineer ... design and performance of vibration-isolated foundations under ...

... experimental ... new forging machines ...

... vibration isolation, foundation vibration ... 1959

... the adverse vibrational effects of forging hammers on their environment ... necessary to provide vibration-isolated foundations ... the following ... have been involved in study ...

I 61019-45

IDENTIFICATION NO. AT5017686

The properties of these springs are (approximately): for w.f.p. = 5000-16 000 kg: height = 380 mm; diameter = 140-280 mm; coils = 4.1-9.2; maximum load =

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VOLOSEVICH, P.P. (Moskva); KURDYUMOV, S.P. (Moskva); BUSURINA, L.N.
(Moskva); KRUS, V.P. (Moskva)

Solution of a one-dimensional plane problem involving the
motion of a piston in an ideally heat-conducting gas. Zhur.
vych.mat. i mat.fiz. 3 no.1:159-169 Ja-F '63. (MIRA 16:2)
(Gas dynamics)

APPROVED FOR RELEASE: 06/19/2000
AP5009387

Samarskiy, A. A. (Moscow); Kurdyumov, S. P. (Moscow); Volosevich, P. P. (Moscow)

Traveling waves in a medium with nonlinear heat conductivity

SOURCE: zhurnal vychislitel'noy matematiki i matematicheskoy fiziki, v. 9, no. 2, 1968, pp. 217

TOPIC TAGS: hydrodynamics, heat conductivity, numerical methods, mathematical physics

MISSION NR: AP5009387

linearly. In a number of cases, analytic solutions are presented. A classification of various types of traveling temperature waves is given. Difference methods are used for the machine solution of a system of partial differential equations for appropriate boundary conditions on the piston, and the results for a number of computer solutions are presented. A comparison of the analytic results with numerical solutions makes it possible to judge the accuracy of the difference methods used and to affirm the existence and stability of the traveling waves constructed. The authors are grateful to L. N. Busurina and V. P. Krus for examining and performing the computer calculations, and also

REF: AF5009387

EXPIRES: 08Jun54

ENCL: 00

SUB CODE: OP, DP

CLASS: 006

OTHER: 003

CA

Forms in which water occurs in peat in connection with drying problems. S. V. Kurdyumov. *Trofiyaya Prom.* 20, No. 4, 18-22 (1947). On the drying curve of peat, characteristic points are the water contents (1) of solid peat in the deposit, (2) of the drained deposit, (3) of the hygroscopic, or first critical point (to which point the drying rate is fairly constant), (4) of a 2nd critical point (to which the drying rate decreases gradually and beyond which it decreases sharply to the equilibrium moisture content, where the rate becomes zero). To decrease the water below this equilibrium content, artificial drying is necessary. The water contents of peat at these characteristic points (based on dry matter) are, respectively, 1010, 733, 257, 67 and 24%. The water retained by peat up to the first critical point (capillary water) freezes at -1.5° ; that retained at the second critical point (adsorbed and chemically bound) does not freeze at -75° . M. Hosh

COMMON ELEMENTS
COMMON VARIABLE MOIS

ASM-31A METALLURGICAL LITERATURE CLASSIFICATION

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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SHEVCHENKO, Ya.O.; KURDYUMOV, S.V., redaktor, professor; HUDNITS'KA, P.P.,
redaktor; RAKHLINA, M.P., tekhnicheskii redaktor.

[Local fuel resources of the Ukrainian S.S.R. and ways of using them]
Mistsevi palvyni resursy URSS i shliakhy ikh vykorystannia. Kyiv,
Vyd-vo Akademii nauk Ukraini'koi RSR, 1953. 25 p. (MLBA 8:2)
(Ukraine--Fuel)

1180. COMPLETE MECHANIZATION OF PILE DRIVING. (YEREMENKO
B.KH.M.I.V.S.I.YA. DOLYCHI TORFA). *Agruzhmet*, 3, 7. (Miev: Gosstankizdat No
508, 1954), 44pp.; abstr. in *Perf. Mater.* (USSR Ind.), Moscow, Mar. 1954,
38; *ibid.*, Apr. 1954, 31). Machines and plant for small and medium
size undertakings are described with illustrations, and diagrams are given
for the complete mechanization of all operations. The winning machines are
all of the excavator type. (L).

KURDYUMOV, S.V.

On a system of mechanizing operations of peat drying. Torf. prom. 30 no.
5:26-28 My '53. (MLBA 6:5)

1. Ukrinstoplivo.

(Peat industry)

KURDYUMOV, S.V., kandidat tekhnicheskikh nauk.

Machine for turning over excavated peat blocks. Torf.prom. 30 no.9:20-21
S '53. (MLda 6:8)

1. Ukrinstoplivo.

(Peat industry)

KURDIUMOV, S.V.

GOLOVANOV, N.G., kandidat tekhnicheskikh nauk.

"Over-all mechanization of the winning of peat." S.V.Kurdiunov.
Reviewed by N.G.Golovanov. Torf.prom. 31 no.4:31 '54. (MLRA 7:6)
(Peat machinery) (Kurdiunov, S.V.)

KURDYUMOV, S.V., kandidat tekhnicheskikh nauk.

Over-all mechanization of peat enterprises of low and medium capacity. Torf.prom. 31 no.6:17-19 '54. (MLRA 7:9)

1. Ukrainskiy nauchno-issledovatel'skiy institut mestnoy i toplivnoy promyshlennosti.
(Peat machinery)

3014. THE TYPE OF SPREADING MACHINES FOR UNELECTRIFIED PEAT
UNDER-TAKINGS. Kuznetsov, B.V. (Tert. Proc. (Peat Ind., Moscow),
Apr. 1955, 13-15). Some particulars are given of the Soviet SH-1,
SH-2 and SH-1 diesel-driven machines. The SH-1 and SH-1 are
recommended. (L).

KURDYUMOV, S.V., kandidat tekhnicheskikh nauk.

Over-all mechanization of un electrified peat enterprises of small and medium capacity. Trudy Inst.torf. AN BSSR 4:78-90 '55.

(MLRA 9:3)

1. Ukrainskiy nauchno-issledovatel'skiy institut mestnykh vidov topliva.

(Peat machinery)

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KURDYUMOV, S.V., kandidat tekhnicheskikh nauk.

Experiments with a new peat digger-roller. Torf.prom. 32 no.1:
11-12 '55. (MLRA 8:3)

1. Ukrnimesttopprom.
(Peat machinery)

KURDYUMOV, S.V.

BAUSIN, A.F.; SOKOLOV, A.A.; ANTONOV, V.Ya.; KURDYUMOV, S.V.; BEL'KEVICH, P.I.; SAVINYKH, A.J.; KARAKIN, F.F.; SOLOPOV, S.G.; YEFIMOV, V.S.; YARIVITSIN, V.I.; RABKIN, B.A.; BABARIN, A.F.; MATVEYEV, L.M.; FUNIKOV, S.A.; CHERNENKOV, D.P.; BULAYEVSKIY, N.V.; kandidat tekhnicheskikh nauk; SHINKARINK, K.K.; TSUPROV, S.A.; GINZBURG, L.N.; VASIL'YEV, Yu.K.

Scientific and technical conference on the work of the peat industry of the Ministry of Electric Power Stations. Torf.prom. 32 no.2:1-20 '55. (MLRA 8:5)

1. Zamestitel' ministra elektrostantsiy (for Bausin). 2. Zamestitel' direktora VNIITP (for Sokolev). 3. Zamestitel' direktora MTI (for Antonov). 4. Zamestitel' direktor "krnlimesttopprom" (for Kurdyumov). 5. Direktor Instituta torfa AN BSSR (for Bel'kevich). 6. Nachal'nik Glavenergozapchasti MES (for Savinykh). 7. Glavnyy inzhener Ivanovskogo torfotresta (for Karakin). 8. Zamestitel' direktora MTI (for Solopov). 9. Upravlyayushchiy Shaturskogo torfotresta (for Yefimov). 10. Glavnyy mekhanik Ivanosvskogo torfotresta (for Yarovitsin). 11. Glavnyy mekhanik Leningradskogo torfotresta (for Rabkin). 12. Glavnyy inzhener Ozeretsko-Naplyuyevskogo torfopredpriyatiya (for Babarin). 13. Glavnyy inzhener Gor'kovskogo torfotresta (for Matveyev). 14. Zamestitel' laboratorii VNIITP (for Funikov). 15. Glavnyy inzhener torfotresta Lentorfostroy (for Chernenkov).

(Continued on next card)

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SHEVCHENKO, Yakov Aleksandrovich [Shevchenko, I.A.O.]; KURDYUMOV, S.V., prof.,
red.; NOVIKOVA, G.O., red. izd-va; ZHUKOVSKIY, A.D. [Zhukovs'kyi, A.D.]
tekh. red.

[Ways of developing the local fuel industry in the Ukraine]

Shliakhy rozvytku mistsevoi palyvnoi promyslovosti URSR.

Kyiv, Vyd-vo Akad. nauk URSR, 1958. 134 p.

(MIRA 11:12)

(Ukraine--Coal) (Ukraine--Peat)

ИЗВЕЩАНИЕ (1/1)

USSR/Chemical Technology - Chemical Products and Their Application. Wood Chemistry
Products. Cellulose and Its Manufacture. Paper, I-23

Abst Journal: Referat Zhur - Khimiya, No 19, 1956, 63345

Author: Kurdyumov, V. A.

Institution: None

Title: Intensification of Production of Oxyterpenic Resin and Solvent

Original

Periodical: Gidroliznaya i lesokhim. prom-st', 1955, No 3, 18-19

Abstract: A diagram is shown of a continuous operation unit for the production of oxyterpenic resin and solvent and its operation is described. Output of the unit on continuous oxidation of turpentine in columns has been increased more than 4 times. Lacquers made from the resin produced in the unit meet the technical specifications.

Card 1/1

KURDYUMOV, Y.A.

Intensifying the production of oxyterpene resins and solvents.
Gidroliz.i lesokhim. prom. 9 no.3:18-19 '56. (MLRA 9:8)

1. Nachal'nik tsekha opytnogo zavoda Tsentral'nogo nauchno-issledovatel'skogo lesokhimicheskogo instituta.
(Terpenes) (Gums and resins)

Kurdyumov, V. A.
AUTHOR: Kurdyumov, V.A., Engineer, 28-4-22/35
TITLE: In Reference to the Suggestions of E.I. Lyubomirskiy
(Po povodu predlozheniy E.I. Lyubomirskogo)
PERIODICAL: Standartizatsiya, 1957, # 4, pp 69-71 (USSR)
ABSTRACT: The article is a critique of the work by E.I. Lyubomirskiy "On the Problem of Standardization of Spline Connections" in Standartizatsiya, 1957, # 4. Lyubomirskiy points out shortcomings in the dimension system by international standard recommendations, without mentioning that this system is accepted in the national standards of Germany, France, Czechoslovakia, Poland, Hungary, Rumania, Bulgaria and others and is used by the majority of Soviet machine building industry branches (transport, coal industry, road building, heavy machinery, tractor and agricultural machinery industry). Comparing the projected international standard with the ГОСТ 6033-51 for involute spline connections. He gives the advantages of the Soviet standard's 30° pressure angle over the 20° pressure angle of the international standard, without mentioning the disadvantages of the Soviet standard.
Lyubomirskiy's statements do not go beyond geometric considerations, whereas the problem has other aspects, such as

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In Reference to the Suggestions of E.I. Lyubomirskiy

28-4-22/35

strength, rigidity, accuracy of machining. Also he cannot support his statements by convincing references to completed investigations of spline connections. As is known, the radial loading increases with an increasing involute profile pressure angle, and with the change from a 20° to 30° pressure angle it would increase 1.58 times. It is questionable if such an increase of radial loading is practical. It is not true that interchangeability of straight-line tooth profile spline connections between USSR and the People's Democratic Republics is impossible. Tolerance systems can always be coordinated, particularly when such systems do not as yet exist.

In general, engineer Lyubomirskiy strives to defend existing state standards, ignoring their shortcomings, and dismisses the ISO project, without being able to give sufficiently grounded arguments for this rejection.

Committee of Standards, Measures and Measuring Devices (Komit-
tet standartov, mer i izmeritel'nykh priborov)
Library of Congress

ASSOCIATION:

AVAILABLE:

Card 2/2

SUMAROKOV, V.P.; GUSAKOV, V.N.; KURDYUMOV, V.A.; VOLODUTSKAYA, Z.M.

Extraction of acetic acid by wood-tar oils from vapor and gas
products obtained in a vertical gas-circulating retort. Sbor.
trud. TSNILKHI no.13:46-59 '59. (MIRA 13:10)
(Acetic acid) (Wood--Chemistry)

LITVCHENKO, N.V., dotsent, kand. tekhn. nauk; KURDYUMOVA, V.A.,
dotsent, kand. tekhn. nauk; DIOMIDOV, B.B., dotsent, kand.
tekhn. nauk

Review of A.V. Tret'iakov's book "Cold rolling mill poten-
tialities." Stal' 24 no.1:67 Ja '64. (MIRA 17:2)

VISHNYAKOV, Ya.D.; KURDYUMOV, V.G.

Electron-microscope study of the dislocation structure of the alloy Co+5% Fe. Fiz. tver. tela 6 no.1:279-281 Ja '64. (MIRA 17:2)

1. Institut fiziki metallov, Moskva.

188200 1418,1555

21366
S/126/61/011/004/016/023
E193/E483

AUTHORS: Kardonskiy, V.M., Kurdyumov, V.G., Kurdyumov, G.V.
and Perkas, M.D.

TITLE: The Effect of the Grain Substructure and Crystal
Properties on Strength. I. The Fe-Ni and Fe-Si Alloys

PERIODICAL: Fizika metallov i metallovedeniye, 1961, Vol.11, No.4,
pp.609-614

TEXT: The object of the investigation described in the present paper was to study the effect of the thermally induced variation of the properties of crystals on strength of metals in the hard condition and on the magnitude of the elastic deformation of microdomains (distortions of the second type). The experimental work was carried out on two Fe-base alloys, one containing 25% Ni and the other 1.15% Si. (The Ni-bearing alloy was chosen for this purpose because of its specific characteristic, consisting in that annealing of this alloy at 450°C brings about a complete removal of the distortions of the second type without significantly affecting the size of the regions of coherent scattering.) The Fe-Ni alloy was hardened by quenching, the Fe-Si alloy by cold rolling to 50% reduction in thickness. In addition to the determination
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The Effect of the Grain ...

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(by X-ray diffraction analysis) of the magnitude of distortions of the second type, $\Delta a/a$, and the size D of the regions of coherent scattering, the yield point (σ_s), U.T.S. (σ_B) and Vickers hardness number (HV) of both hardened and partially annealed alloys were measured, and the temperature-dependence of these properties was determined for both hardened and fully annealed specimens. The results of the first series of experiments, carried out on preliminarily hardened Fe-Ni alloy, are reproduced in Fig.1, where HV, σ_s (kg/mm²), D (10⁻⁶, cm) and $\Delta a/a$ (10⁻³) are plotted against the annealing temperature (°C); in addition, the diagram shows the temperature-dependence of HV and σ_s (curves, marked HV(t) and $\sigma_s(t)$, respectively). It will be seen that the temperature dependence of σ_s and HV is quite different from the relationship between these properties (measured at 20°C) and the annealing temperature. Thus, σ_s measured at 450°C is 25 kg/mm² lower than σ_s measured at 20°C after annealing at 450°C, the corresponding difference for HV being 90 units. On the other hand, the temperature-dependence of σ_s and HV is almost identical with the relationship between $\Delta a/a$ and the annealing temperature. The fact that σ_s of preliminarily

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The Effect of the Grain ...

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hardened specimens is practically constant after annealing at various temperatures indicates that σ_g , measured under these conditions, reflects mainly the character of the variation of the grain substructure during heating; in fact, D of specimens, annealed at various temperatures, also remains practically constant (see Fig.1). In the next series of experiments, preliminarily hardened specimens of the Fe-Ni alloy were annealed at 430°C to attain almost complete removal of the distortions of the second type, and then the temperature dependence of σ_g of these specimens was determined. This was found to be identical with that of fully hardened alloy, whereby the view was confirmed that the resistance of an alloy to deformation is not increased by the presence of distortions of the second type. Owing to the comparatively low temperature at which the reverse $\alpha \rightarrow \gamma$ transformation takes place in the Fe-Ni alloy, it was not possible to use this material to study the relationship between $\Delta a/a$ and the temperature dependence of annealed specimens. For this purpose the Fe-Si alloy was more suitable. The results of experiments carried out on this material are reproduced in Fig.4 which shows: temperature dependence of HV of cold-rolled alloy

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(curve HV(t), white triangles); temperature dependence of HV of specimens annealed at 750°C (curve HV(t), white squares); variation of HV of preliminarily hardened specimens after annealing at various temperatures (curve HV, white triangles); variation of η (dots) and $\Delta a/a$ (white triangles) after annealing at various temperatures. The temperature dependence of HV of the annealed specimens reflected the decrease in the resistance of the alloy to deformation due to the variation of the properties of crystals with rising temperature; since the specimens were annealed at 700°C, their grain substructure should remain unchanged during subsequent heating and should not affect the variation of HV. In the case of the cold-rolled specimens, whose HV was measured at room temperature after annealing at various temperatures, the variation of HV reflected only the changes in the micro- and sub-microscopic structure of the grains, brought about by heating to progressively higher temperatures. This means that in the temperature dependence of HV of cold-rolled material, HV at each temperature should be determined by the changes in both the grain substructure and the crystal properties that have taken place as a result of heating to this
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E193/E483

The Effect of the Grain ...

temperature. Starting from these considerations, the present authors constructed a "theoretical" curve, illustrating the temperature dependence of HV of cold-worked alloy, simply by adding (for each temperature) the decrease in HV due to the change in the crystal properties (found from the experimentally determined temperature dependence of annealed specimens) to that due to the variation of the grain substructure (found from the experimentally determined variation of HV of cold-worked specimens after annealing at various temperatures). The results plotted in Fig.4 (black triangles) were in good agreement with the experimental curve (white triangles). The results of the present investigation confirmed the view that strength (resistance to deformation) of a hardened material is determined by two factors: (1) the properties of the crystals (resistance to the movement of dislocations in the crystal regions, free from sub-boundaries) and (2) the substructure of the crystals (size of the sub-micro-regions, presence of sub-boundaries, degree of misorientation of the mosaic blocks). There are 5 figures and 9 Soviet references.

Card 5/7

X

21366

The Effect of the Grain ...

S/126/61/011/004/016/023
E193/E483

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

SUBMITTED: August 26, 1960

Card 6/7

KURDYUMOV, V.G.; ORLOV, L.G.; USIKOV, M.P.

Thinning of metallic samples by electrolytic polishing for inspection
by means of a transmission electron microscope. Zav. lab. 27
no. 12:1490-1494 '61. (MIRA 15:1)

1. Tsentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii
im. I.P. Bardina.

(Metals) (Electrolyting polishing)
(Electron microscopy)

Handwritten:
MATSUK, Yu.P., inzhener; KURDYUMOV, V.N., inzhener; MALYY, G.D., inzhener;
BEZUGLOV, M.I., inzhener.

Mechanical removal of solvent from oilseed meal. Masl.-zhir. prom.
23 no.3:6-7 '57. (MLRA 10:4)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut zhirov (for Matsuk).
2. Lenzhirkombinat (for Kurdyumov).
3. Poltavskiy zhirovoy kombinat (for Malyy).
4. Krasnodarskiy maslozhirovoy kombinat (for Bezuglov).
(Oils and fats)

BEZUGLOV, I.Ye.; KURDYUMOV, V.N., inzh.; V rabote prinimali uchastiye:
GABRILENKO, I.V.; GRABOVSKIY, I.I.; MESHCHADIM, A.G.; BELOBORODOV,
V.V.; VISHNEPOL'SKAYA, F.A.; MATSUK, Yu.P.; GAYTSKHOKI, H.I.;
USACHEV, A.S.; ABKINA, N.N.; RUMYANTSEVA, A.G.; KOSHELEV, A.P.;
GRIGOR'YEV, F.L.; LUKASHEVICH, A.M.; STYAZHKINA, A.G.; MIKHAYLOVICH,
A.N.; YEDEMSKIY, P.M.; MASLOV, P.V.; KUDRYASHEVA, Z.P.; PROSMUSHKIN,
R.M.; SHTAL'BERG, V.A.; BOYTISOV, N.I.

Operational experience with a newly introduced oil-extraction line
equipped with the DS-70 belt-conveyer extractor. Masl.-zhir.prom.
26 no.3:29-31 Mr '60. (MIRA 13:6)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut zhirov (for
Bezuglov, Gabrilenko, Grabovskiy, Meshchadim, Beloborodov,
Vishnepol'skaya, Matsuk and Gaytskhoki). 2. Leningradskiy
zhirovoy kombinat (for Kurdyumov, Usachev, Abkina, Rumyantseva,
Koshelev, Grigor'yev, Lukashevich, Styazhkina, Mikhaylovich,
Yedemskiy, Maslov, Kudryasheva, Prosmushkin). 3. Leningradskoye
otdeleniye tresta "Prodmontazh" (for Shtal'berg and Boytsov).
(Leningrad--oils and fats)
(Extraction apparatus)

BEZUGLOV, I.Ye.; KURDYUMOV, V.N., inzh.

Experience in operating an extraction line with the DC-70
belt extractor. Masl.-zhir.prom. 26 no.4:30-33
Ap '60. (MIRA 13:6)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut zhirov
(for Bezuglov). 2. Leningradskiy zhirovoy kombinat (for
Kurdyumov).

(Extraction apparatus)
(Oil industries--Equipment and supplies)

83897

S/020/60/134/003/007/020
B019/B060

9,2180

AUTHOR: Kurdyumov, V. N.

TITLE: Reaction Forces Produced by a Cherenkov Radiation in a Crystal

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 134, No. 3,
pp. 563 - 566

TEXT: The author studied the Vavilov-Cherenkov radiation in the case of a uniform motion of the charge in an arbitrary direction in a monoaxial nonmagnetic crystal. The expressions for the forces causing a deviation of the charge from their straight-lined path, are analyzed. Using the premises laid down by V. L. Ginzburg (Ref. 1), two expressions are found for the slowing-down force and for the deflecting force, that act upon the charge, by starting from formulas (1) holding for crystal potentials. The emission of ordinary and extraordinary waves is examined next. Formulas (5) and (9) are derived, considering both wave types, for the above forces acting upon the charged moving particle. Finally, a special case is considered, for which it is assumed that $\epsilon_0(\omega) > 1$ and $\epsilon_e(\omega) > 1$. LX

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Reaction Forces Produced by a Cherenkov
Radiation in a Crystal

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It is further assumed in this case that the emission condition (8), namely, $B^2 > C^2 + AC$, where the relations $A = \epsilon_0 \epsilon_e \beta^2 - (\epsilon_e - \epsilon_c)(\cos^2 \alpha - \sin^2 \alpha \sin^2 \varphi')$, $B = (\epsilon_e - \epsilon_0) \sin \alpha \cos \alpha \sin \varphi'$, and $C = -\epsilon_0 - (\epsilon_e - \epsilon_0) \sin^2 \alpha \sin^2 \varphi'$ hold, is fulfilled. The authors observe from the formulas obtained that at small angles α between direction of particle motion and the Z-axis of the crystal, the Cherenkov emission stabilizes the motion of the particle, if $\epsilon_e > \epsilon_0$. If $\epsilon_e < \epsilon_0$, the Cherenkov emission has a de-stabilizing effect. The author thanks A. I. Morozov for his assistance. There are 4 references: 3 Soviet and 1 US.

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

PRESENTED: April 26, 1960, by M. A. Leontovich, Academician

SUBMITTED: April 19, 1960

Card 2/2

NESHCHADIM, A.G., inzh.; KURDYUMOV, V.N., inzh.; Prinsipalni uchastiye:
YEDEMSKIY, P.M.; FADEYEVA, K.M.; SOKOLOV, A.I.; PETROVA, A.I.;
MIKHAYLOVA, N.M.; SERGEYEVA, Z.P.

Influence of temperature on the extraction of prepressed sunflower
cakes in the DS-70 extractor. Masl.-zhir. prom. 27 no.6:35-38
Je '61. (MIRA 14:6)

1. Veronezhskiy tekhnologicheskii institut, Leningradskoye otdeleniye
(for Neshchadim). 2. Leningradskiy maslozhirovoy kombinat (for
Kurdyumov, Yedemskiy, Fadeyeva, Sokolov, Petrova, Mikhaylova, Sergeyeva).
(Sunflower oil)

L 4217-66 EWT(1)/EWT(m)/ETC/ENG(m)/EPF(n)-2/EPA(w)-2 DIAAP/IJP(c) AT
ACCESSION NR: AP5025888 UR/0057/65/035/010/1771/1781

AUTHOR: Kurdyumov, V.N. 04/45

TITLE: On the theory of the Cerenkov radiation of a charge in a cold plasma 19

SOURCE: Zhurnal tekhnicheskoy fiziki, v. 35, no. 10, 1965, 1771-1781

TOPIC TAGS: Cerenkov radiation, charged particle, plasma dynamics, plasma electromagnetic wave, plasma magnetic field

ABSTRACT: The author calculates the Cerenkov radiation of a point charge moving parallel to an applied magnetic field through an infinite cold plasma. The calculations were undertaken because of recent interest in possible practical applications of the effect (P.D.Coleman, Report at the Fourth International Conference on Microwave Techniques, Scheveningen, Holland, 1962) and because of errors in the calculations of H.S.Tuan and S.R.Seshadri (Trans. IEE, MTT-II, 6, 462, 1963) which led to an overestimate of the energy radiated in the ordinary wave when two Cerenkov cones are simultaneously present. It is shown that when two Cerenkov cones are present, only one corresponds to radiation of energy, and the other corresponds to absorption. In the present calculations, collisions among the plasma

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ACCESSION NR: AP5025888

particles and the motions of the ions are neglected. Conditions are derived for radiation of the ordinary and extraordinary waves and the spectral density of the radiation is presented graphically for certain values of the parameters. Formulas are given for the total energy radiated in the ordinary and in the extraordinary wave as functions of the particle velocity and the magnetic field strength. Orig. art. has: 35 formulas, 7 figures, and 1 table. [15]

ASSOCIATION: none

SUBMITTED: 04Jan65

ENCL: 00

SUB CODE: ME,EM

NR REF SOV: 005

OTHER: 002

ATD PRESS: 4/21

Card 2/2 DP

L 28497-66 EPF(n)-2/EWT(l)/EWT(m)/ETC(f)/EWG(m) LJP(c) AT

ACC NR: AP6013111

SOURCE CODE: UR/0057/66/030/004/0588/0594

AUTHOR: Kurdyumov, V.N.

ORG: none

TITLE: Cerenkov excitation by a charge moving in a cold magnetized plasma of the ionic branches of the oscillations

SOURCE: Zhurnal tekhnicheskoy fiziki, v. 36, no. 4, 1966, 588-594

TOPIC TAGS: plasma magnetic field, plasma oscillation, plasma wave, Cerenkov radiation, charged particle,

ABSTRACT: The author extends his earlier calculations (ZhTF, 35, 1771, 1965) of the Cerenkov radiation of a charged particle moving parallel to an external magnetic field in a plasma to take account of the effects of ion motions. Ion motions are significant at frequencies of the order of the ion Larmor frequency, and their influence is predominant when the ion Larmor frequency is comparable with the plasma frequency. The calculations are performed as in the earlier paper, the notation and results of which are freely used without repeating the derivations or, in some cases, the definitions. The ion motions are taken into account by suitably modifying the earlier expression for the dielectric tensor. The corresponding dispersion equation has five branches, for three of which, corresponding to Alfvén waves, fast magnetic sound, and

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UDC: 533.951

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ACC NR: AP6013111

slow extraordinary waves, the refractive index can exceed unity. Ion motions have little influence on the extraordinary waves and these are not discussed further. Critical velocities of the particle for radiation of different types of waves are derived, and the characteristics of the Cerenkov radiation in the different velocity ranges are tabulated. An ultrarelativistic particle in a strong magnetic field can emit two cones of Cerenkov radiation of the same frequency but of different types, both of which carry off energy from the particle; in all other cases when two cones are present, one of them corresponds to absorption of energy by the particle from the plasma. Extraordinary waves are responsible for most of the energy loss of the particle in comparatively weak magnetic fields; fast magnetic sound carries off most of the energy in stronger magnetic fields, and Alfvén waves are the most significant in strong fields. S.R.Seshadri and H.S.Tuan (J.Research NBS Radio Science, 69D, No.5, 767-785,1965) have recently discussed problems similar to those treated here. Orig. art. has: 14 formulas, 3 figures and 1 table.

SUB CODE: 20

SUBM DATE: 02Jun65

ORIG. REF: 002

OTH REF: 002

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