APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065520006-5

L 22769-66 FSD/EWT(1)/EEC(k)-2/T/EWP(k)/EWA(m) IJP(c) WG

ACC NR: AP6010975 SOURCE CODE: UR/0056/66/050/003/0551/0559

AUTHOR: Basov, N. G.; Grasyuk, A. Z.; Zubarev, I. G.; Katulin, V. A.; Krokhin, O. N.

ORG: Physics Institute im. P. N. Lebedev, Academy of Sciences SSSR (Fizicheskiy institut Akademii nauk SSSR)

TITLE: Two-photon optically excited semiconductor laser 25,44

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 50, no. 3, 1966, 551-559

TOPIC TAGS: laser, semiconductor laser, nonlinear optics, two photon absorption, optical excitation

ABSTRACT: The present paper is an expanded version of an earlier article on a two-photon optically excited GaAs laser (Zhurnal eksperimental'noy i teoreticheskoy fiziki, pis'ma v redaktsiyu, v. 1, no. 4, 1965, p. 29; (see ATD PRESS, v. 4, no. 15, 1965, p. 4). It is pointed out that in calculating the coefficients of two-photon absorption in GaAs, R. Braunstein and N. Ockman (Physical Review, v. 134, no. 2A, 1964, p. 499) neglected the interband states in the valence band and the interference term in the matrix elements, and thus arrived at incorrect results. Since a formula derived by L. V. Keldysh (Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 47, 1964, p. 1945) for the probability of multiphoton absorption gives a lower value than the experimentally obtained data for two-photon absorption, formulas are derived for the probability and the coefficient of two-photon absorption in GaAs, using the perturba-

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L 22799-66

ACC NR: AP6010975

tion theory and taking into account the band structure parameters of GaAs. In addition, ex[illegible] are also obtained for the dependence of the excitation intensity on the penetration depth of the exciting radiation into the semiconductor and the external coherent quantum yield and its dependence on the internal losses in the laser and on the length of the cavity. The calculated data are found to be in good agreement with the experimental results. Orig. art. has: 18 formulas and 7 figures. [CS]

SUB CODE: 20/ SUBM DATE: 06Oct65/ ORIG REF: 007/ OTH REF: 004/ ATD PRESS: 4229

Card 2/2 dda

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065520006-5"

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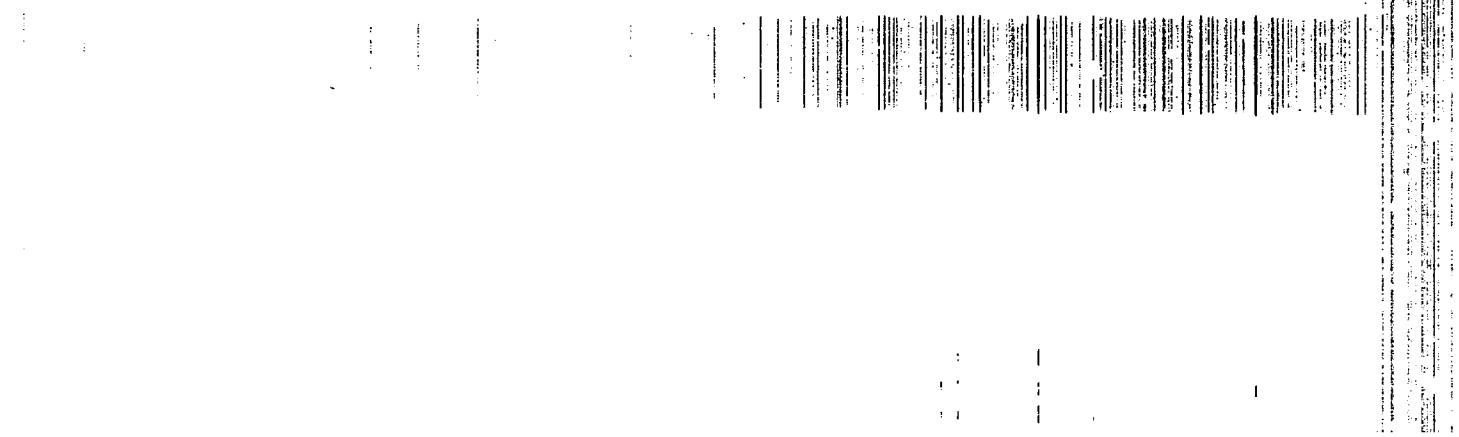

BASOV, N.G.; GRASYUK, A.Z.; ZUBAREV, I.G.

Regenerative optical quantum amplifiers. Dokl. AN SSSR 157 no.5:1084-1087 Ag '64. (MIRA 17:9)

1. Chlen-korrespondent AN SSSR (for Basov).

BASOV, N.G.; GRASYUK, A.Z.; ZUBAREV, I.G.

Sensitivity of a laser operating on neodymium glass. Zhur. prikl. spekt. 3 no.1:26-31 Jl '65. (MIRA 18:9)

L 9460-66 EWD/EWT(l)/EWP(e)/EWT(m)/EEC(k)-2/T/EWP(t)/EWP(k)/EWP(b)/EWA(c)-2/EWA(b)-
ACC NR [illegible]

AUTHOR: Basov, N. G.; Krasyuk, A. A.; Tuburov, I. G.; Katulin, V. A.

ORG: Physics Institute im. P. N. Lebedev, Academy of Sciences SSSR (Fizicheskiy Institut Akademii nauk SSSR)

TITLE: Laser action in CdS due to optical excitation by radiation from a ruby laser

SOURCE: Fizika tverdogo tela, v. 7, no. 12, 1965, 3639-3640

TOPIC TAGS: laser, semiconductor laser, ruby laser, nonlinear optics, two photon absorption

ABSTRACT: Laser action is reported in CdS excited by a ruby laser at 77K. Since the energy of photons of incident radiation (λ = 1.78 w) is smaller than the width of the forbidden gap (2.5 ev), two-photon absorption was responsible for laser action. A 5 x 3 x 3 mm sample forming a Fabry-Perot cavity was excited by radiation from a [illegible] ruby laser [illegible] pulse duration [illegible] nsec. The emission spectrum from CdS at various pump densities [illegible] is similar to that of electron-beam-pumped CdS. The broadening of the oscillation line with higher pump power was attributed to an increase in the number of modes; however, a resolving power of 1 Å did not make it pos-

Card 1/2

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L 9460-66

ACC NR: AP6000868

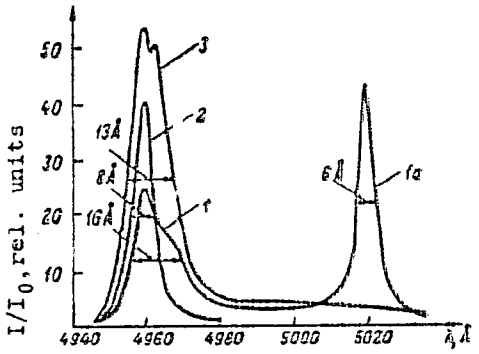

Fig. 1. The emission spectrum of CdS excited by a ruby laser. The pump power density: 1 and 1a - 60; 2 - 80; 3 - 600 Mw/cm^2. The vertical scale is different for different curves.

sible to observe the different modes. At 100 Kw/cm^2 emission occurred throughout the thickness of the crystal. Orig. art. has: 1 figure and 1 table. [CB]

SUB CODE: 20 SUBM DATE: 15May65/ ORIG REF: 004/ ATD PRESS: 4135

Card 2/2 pw

BLOKH, G.S.; ZABREBNEVA, A.V.; ZUBAREV, K.A.; PICHURO, S.S.; TVOROGOVA, Ye.L.; GNATYUK, T.A.

Producing gypsum fiber sheets on round-screen sheet-making machines. Stroi. mat. 8 no.2:15-17 F '62. (MIRA 15:3)
(Gypsum products)

ANASTASIADI, A.P.; BOROVSKIY, V.R.; VYBORNOV, G.V.; KOPELYANSKIY, G.D.; MAK, I.L.; PECHURO, S.S.; PIYEVSKIY, I.M.; RACHEVSKAYA, K.D.; REYZNER, Yu.B.; RYBAK, L.L.; TSEPELIOVICH, M.R.; SHUMAKHER, L.I.; YUSHKEVICH, M.O.[deceased]; AGEYENKO, Yu.G., nauchnyy red.; BELUGIN, A.T., nauchnyy red.; KOGAN, G.S., nauchnyy red.; KRZHEMINSKIY, S.A., nauchnyy red.; MITSKEVICH, M.I., nauchnyy red.; SILENOK, S.G., nauchnyy red.; TRILESNIK, Z.Ye., nauchnyy red.; ZUBAREV, K.A., glav. red.; TROFIMOV, I.P., red.; SKRAMTAYEV, B.G., glav. red.; BALAT'YEV, P.K., red.; KITAYEV, Ye.N., red.; KITAYGORODSKIY, I.I., red.; ROKHVARGER, Ye.L., red.; KHOLIN, I.I., red.; CHERKINSKAYA, R.L., red.; RODIONOVA, V.M., tekhn. red.

[Manual on the production of gypsum and gypsum products] Spravochnik po proizvodstvu gipsa i gipsovykh izdelii. [By] A.P. Anastasiadi i dr. Pod red. K.A.Zubareva. Moskva, Gosstroiizdat, 1963. 464 p. (MIRA 16:7)
(Gypsum) (Gypsum products)

ZUBAREV, K.A., insh.; MECHURO, S.S., insh.

Design of a continuous gypsum kiln. Stroi. mat. 5 no.1:39 Ja '59.
(MIRA 12:1)

(Gypsum) (Kilns)

GORODETSKIY, David Yevseyevich; ZHURIN, Grigoriy Mikhaylovich; ZUBAREV, Leonid Aleksandrovich; ADAMOVA, L., red.; CHEMKO, L., tekhn. red.

[Put the reserves of the fuel industry to use]Reservy toplivnoi promyshlennosti v deistvii. Sverdlovsk, Sverdlovskoe knizhnoe izd-vo, 1961. 110 p. (MIRA 15:8)
(Coal mines and mining) (Peat)

ZUBAREV, L. F.

SUBAREV, L. F. -- "Investigation of the Possibility of Increasing the Economy of a Carburetor Engine at the Expense of the Improvement of the Mexture," Sub 22 Feb 52, Moscow Automotive Mechanics Inst (Dissertation for the Degree of Candidate in Technical Sciences)

SO: VECHERNAYA MOSKVA, JANUARY-DECEMBER 1952

ZUBAREV, L.V.; MARUNICH, I.P.; AVDEYEV, A.M.

Experience in using automatic levels in railroad surveying.
Transp. stroi. 5 no.9:15-16 S '55. (MLRA 9:2)

1.Nachal'nik izyskatel'skikh partii Moszheldorproyekta.
(Railroads--Surveying)

ZUBAREV, M.F.

AID P - 1184

Subject : USSR/Electricity

Card 1/1 Pub. 29 - 6/27

Author : Zubarev, M. F., Eng.

Title : Improvement of a feedwater installation for feeding of hot water lines

Periodical : Energetik, 12, 9-10, D 1954

Abstract : The author describes the details of a new installation for feedwater deaeration, filtration and chemical treatment. Two drawings.

Institution : None

Submitted : No date

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065520006-5"

91-58-6-10/39

AUTHOR: Zubarev, M.F., Engineer

TITLE: Elimination of Carbonate Deposits Blocking Heating Systems (Ustraneniye zanosa teplovykh setey karbonatnymi otlozheniyami)

PERIODICAL: Energetik, 1958, Nr 6, pp 12-13 (USSR)

ABSTRACT: In the thermal circuit described by the author, where boiler blow-through water was used, the hot-water feed-pump was found to be regularly blocked by deposits of carbonate scale. This was due to an excess of boiler water as the result of which chemical reaction took place between the salts in the water entering the circuit and the alkali hydrate in the boiler water. To prevent this, the supply of boiler water was reduced until the feed water from the tank contained only traces of alkali hydrate. By lengthening the circulation path in the sedimentation tank, the period of contact between the reagents in the boiler water and the salts in the water entering the circuit was increased to use the greatest possible quantity of blow-through boiler water. This was achieved by reconstructing the feed tanks and fitting them with mechanical filters.

Elimination of Carbonate Deposits Blocking Heating Systems

As a result there have been no further deposits in the pump, scale being formed on the inside surfaces of the tubes in which the water circulates during processing. There is one figure.

AVAILABLE: Library of Congress

Card 2/2 1. Boilers-Scale 2. Boilers-Performance

AUTHOR: Zubarev, L.F., Engineer 91-58-8-6/34

TITLE: Decreasing the Number of Personnel of the Chemical Water Purifying Section of an Electric Power Plant (Umen'sheniye chislennosti personala khimvodoochistki elektrostantsii)

PERIODICAL: Energetik, 1958, Nr 8, pp 12-13 (USSR)

ABSTRACT: Methods of mechanization and rationalization of the work processes to cut down the number of personnel needed in the chemical water purifying section of an electric power plant are described.

1 Industrial plants--Control systems 2. Personnel--Reduction

Card 1/1

ZUBAREV, M.P., inzh.

Eliminating carbonate plugging of heating systems. Energetik 6 no.6: 12-13 Je '58. (MIRA 11:8)

(Heating pipes) (Feed-water purification)

ZUBAREV, M.F., inzh.

Decreasing the number of people engaged in water purification at electric power plants. Energetik 6 no.8:12-13 Ag '58. (MIRA 11:10)

(Electric power plants) (Water--Purification)

8 (6)

SOV/91-59-4-9/28

AUTHOR: Zubarev, M. F., Engineer

TITLE: The Use of Plastic Conical Slotted Caps VTI-K (Ekspluatatsiya shchelevykh plastmassovykh kolpachkov VTI-K konicheskoy formy)

PERIODICAL: Energetik, 1959, Nr 4, pp 15 - 16 (USSR)

ABSTRACT: Engineer P. V. Il'in published an article in Energetik, 1958, Nr 8, where he pointed to the inadequate mechanical strength of the slotted caps of type VTI-K and VTI-5 used in a filter of chemical water purification equipment. The author of this article confirms this complaint and gives some suggestions for increasing the length of service of the plastic caps.

Card 1/1

ZUBAREV, M.F., inzh.

Utilization of the VTI-K conical slit-type plastic caps.
Energetik 7 no.4:15-16 Ap '59. (MIRA 12:5)
(Feed-water purification--Equipment and supplies)

ZUBAREV, M.F., inzh.

Anticorrosive coating for the inner surfaces of equipment for chemical purification of water. Energetik 6 no.6:13 Je '58. (MIRA 11:8)
(Corrosion and anticorrosives)
(Feed-water purification)

91-58-6-11/39

AUTHOR: Zubarev, M.F., Engineer

TITLE: Anti-Corrosion Coating for Internal Surfaces of Chemical Water-Purifiers (O protivokorroziynom pokrytii vnutrennikh poverkhnostey oborudovaniya khimicheskoy vodoochistki)

PERIODICAL: Energetik, 1958, Nr 6, p 15 (USSR)

ABSTRACT: The author describes how, in order to prevent corrosion, the internal surfaces of the reserve tanks for chemically purified condensed water were coated with cement grout. However, great increases in water hardness were observed and considerable deposits of up to 76% ferrous and aluminum oxides were subsequently found at the bottom of the tanks. Consequently the use of a cement coating for protecting mechanical and cation filters from corrosion cannot be recommended.

AVAILABLE: Library of Congress

Card 1/1 1. Anticorrosive coatings-Effectiveness

ZUBAREV, M.F., inzhener.

Improving the feed-water installation of heating networks. (MLRA 7:12)
Energetik 2 no.12:9-10 D '54.
(Heating from central stations)

Thursday, September 26, 2002 CIA-RDP86-00513R002065520006-5"

ZUBAREV, M. I.

"The Effect of the Technique of Introducing Mineral Fertilizers on the Formation of the Potato Crop Under Conditions in Sverdlovskaya Oblast." Sub 1 Mar 51, All-Union Sci Res Inst of Fertilizers, Agricultural Engineering, and Soil Science imeni K. K. Gedroyets.

Dissertations presented for science and engineering degrees in Moscow during 1951.

SO: Sum. No. 480, 9 May 55

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065520006-5"

ZATUCHNAYA, Anna L'vovna; ZUBAREV, Matvey Nikodimovich; PANTELEYEV, Viktor Stepanovich; SEREBRO, Grigoriy Yakovlevich; SOLOPOV, Grigoriy Platonovich, kand. sel'khoz. nauk; SELEZNEV, N.G., red.

[Orchards and berry patches] Sady i iagodniki. [By] A.L. Zatuchnaia i dr. Tula, Tul'skoe knizhnoe izd-vo, 1963. 215 p. (MIRA 17:6)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065520006-5"

ZUBAREV, N., agronom-meteorolog.

Sowing green manure crops on stubble. Nauka i pered. op. v sel'khoz. 18 no.2:45-46 F '58. (MIRA 11:3)

(Green manuring)

J

USSR / Soil Science. Organic Fertilizers.

Abs Jour: Ref Zhur-Biol., No 21, 1958, 95771.

Author : Zubarev, N.
Inst : Not given.
Title : Fields of Legume Stubble.

Orig Pub: Nauka i peredov. opyt v s. kh., 1958, No 2, 45-46.

Abstract: No abstract.

Card 1/1

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065520006-5"

ZUBAREV, N.I.

Radial forces acting on the rotor of a model of a Francis turbine in steady operation. Trudy LPI no.246:7-12 '65.
(MIRA 18:6)

ZUBAREV, N.

IMPROVE USE OF TRACTORS. By Stalin Prize Winner N. Zubarev, Chief Designer at Ordzhonikidze Tractor Plant, Kharkov, and N. Serikov, Factory Chief Technologist.

Soviet Source: Izvestia, April 23, p. 2.

Current Digest of the Soviet Press (in CIA Library), Vol. 4, No. 17, 1952, p. 19

BALABIN, I.V.; ZUBAREV, N.A.

Investigating force interaction between a wide-base tire and a wheel rim. Avt. prom. 30 no.6:16-19 Je '64. (MIRA 17:12)

1. TSentral'noye konstruktorskoye byuro po obodiam.

KOLESNIKOV, Venedikt Andreyevich, prof., doktor sel'skokhoz.nauk; ZHURIN, Aleksey Borisovich, agronom; KAPTSINEL', Mikhail Abramovich, agronom; KAPTSINEL', Anna Petrovna, agronom; KOVAL', Alla Alekseyevna, kand.sel'skokhoz.nauk; KORCHAGIN, Vladimir Nikolayevich, entomolog; ZUBAREV, N.A.; LUR'YE, B.D., red.; RAZGULYAYEVA, N.G., tekhn.red.

[Amateur fruitgrower's reference manual] Kalendar'-spravochnik sadovoda-liubitelia. Moskva, Izd-vo M-va sel'.khoz.SSSR, 1959. 494 p. (MIRA 13:4)

(Fruit culture)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065520006-5"

ZUBAREV, N. A.

"New Tasks in Agrometeorology," Meteorol. i gidrologiya, No 10, 1953, pp 9-13

The principal task of agrometeorology is the evaluation of agrometeorological conditions that determine the effectiveness of the various methods of agrotechnics. The Hydrometeorological Service, considering the complicated and desired agrometeorological conditions, must in good time give all the necessary data for determining how in the current year these conditions will develop and what harvest will be given by the sowing in the various regions for one or another agrotechnical measure. This will permit one to determine the optimum variants and the values of the deviations from the optimum to one or the other side. (RZhGeol, No 5, 1954)

SO: Sum. No. 568, 6 Jul 55

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065520006-5"

ZUBAREV, N. A.

"Meteorological Characteristics of the Areas of Virgin and Fallow Land Reclamation" published in - An Aid to Agricultural Specialists in the Reclamation of Virgin and Fallow Lands, Sbornik Materialov i Statey. Vol.1, pp 25-144, 1954

Chief, Methodological Sector of the Central Forecasting Institute

Translation No.431, 30 Jun 55

ZUBAREV, N.A.

Estimating agrometeorological conditions influencing the formation of farm crops (by the method of anomaly estimation). Trudy TSIP no.88:37-56 '59. (MIRA 12:8)
(Meteorology, Agricultural)

SHKOL'NIKOV, M.B.; inzh.; ZUBAREV, N.A., inzh.; KHOREV, P.P., inzh.

Fatigue testing of motortruck wheel disks. Vest.mash. 41 no.1:42-46 Ja '61. (MIRA 14:3)
(Motortrucks--Wheel--Testing)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065520006-5"

ZUBAREV, N.A.

New tasks in agricultural meteorology. Meteor.i gidrol. no.10:9-13 N-D '53. (MLRA 8:9)
(Meteorology, Agricultural)

ACC NR: AP5028261 SOURCE CODE: UR/0113/64/000/006/0016/0019

AUTHOR: Balabin, I. V.; Zabarev, N. A.

ORG: Central Rim Design Bureau (Tsentral'noye konstruktorskoye byuro po obodam)

TITLE: The study of stress interaction between a wide tire and a wheel rim

SOURCE: Avtomobil'naya promyshlennost', no. 6, 1964, 16-19

TOPIC TAGS: vehicle tire, friction, wear material, wear resistance

ABSTRACT: Research on the design of wide tires which could replace the double tires on trucks and buses includes [illegible] tests of [illegible] 508 and 940 x 150 - 508 wide [illegible] performed [illegible] TsKB [illegible] edges [illegible] respectively. [illegible] vehicle with [illegible] data concerning the conditions and results of the tests. All tires [illegible] along the side walls. A comprehensive analysis of the results shows that the pressure at the [illegible] edge caused [illegible] does not remain [illegible] ordinary tires [illegible] surface of the [illegible]

UDC: 629.11.012.5

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L 6150-66

ACC NR: AP5023261

design of wide tires. The necessary tight fitting may be achieved, e. g., by increasing the [illegible] which allows the reduction in edge width which, [illegible] of the sides of the tires. Further tests are [illegible] the various tire and tire parameters [illegible]

SUB CODE: 13 SUBM DATE none REF REF SOV: OTH REF: 001

Card 2/2

ZAVALISHIN, P.A.; KHITRUK, M.I.; ZUBAREV, N.G., laureat Stalinskoy premii, red.; DONSKOY, Yu., red.; LADNYY, Yu., tekhn. red.

[Efficiency promoters and inventors at the Kharkov Tractor Factory] Ratsionalizatory i izobretateli Khar'kovskogo traktornogo zavoda. Pod red. N.G. Zubareva. [Khar'kov] Khar'kovskoe knizhno-gazetnoe izd-vo, 1952. 47 p. (MIRA 11:9)

(Kharkov--Tractor industry)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065520006-5"

KHRUSHCHOV, N.A.; BUTKEVICH, T.V.; YERSHOV, A.D., glavnyy red.; SHMANENKOV, I.V., zam.glavnogo red.; CHERNOSVITOV, Yu.L., nauchnyy red.; GINZBURG, A.I., red.; ZVEREV, L.V., red.; ZUBAREV, N.N., red.; KREYTER, V.M., red.; MOKROUSOV, V.A., red.; SOLOV'YEV, D.V.; STOLYAROV, A.G., red.; IVANOVA, A.G., tekhn.red.

[Industrial requirements for the quality of mineral raw materials; handbook for geologists] Trebovaniia promyshlennosti k kachestvu mineral'nogo syr'ia; spravochnik dlia geologov. Izd.2., perer. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po geol. i okhrane nedr. No.27. [Molybdenum and rhenium] Molibden i renii. Nauchnyi red. IU.L.Chernosvitov. 1960. 45 p. (MIRA 14:1)

1. Moscow. Vsesoyuznyy nauchno-issledovatel'skiy institut mineral'nogo syr'ya.
(Molybdenum ores) (Rhenium ores)

VINOGRADOV, S.S.; ZUBAREV, N.N., nauchnyy red.; YERSHOV, A.D., glav. red.; CHERNOSVITOV, Yu.L., zam. glav. red.; SHMANENKOV, I.V., zam. glav. red.; GINZBURG, A.I., red.; ZVEREV, L.V., red.; MOKROUSOV, V.A., red.; SOLOV'YEV, D.V., red.; TROYANOV, A.T., red.; KHRUSHCHOV, N.A., red.; LYUBCHENKO, Ye.K., red. izd-va; BYKOVA, V.V., tekhn.red.

[Industry's requirements as to the quality of mineral raw materials] Trebovaniia promyshlennosti k kachestvu mineral'nogo syr'ia; spravochnik dlia geologov. Izd.2., perer. Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po geologii i okhrane nedr. No.10[Limestones]Izvestniaki. Nauch. red. N.N.Zubarev. 1961. 61 p.
(MIRA 14:10)

1. Moscow. Vsesoyuznyy nauchno-issledovatel'skiy institut mineral'nogo syr'ya.

(Limestone)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065520006-5"

VASIL'YEV, P.V.; YERSHOV, A.D., glavnyy red.; CHERNOSVITOV, Yu.L., zam. glavnogo red.; SHMANENKOV, I.V., zam.glavnogo red.; KAIMYKOV, G.S., nauchnyy red.; GINZBURG, A.I., red.; ZVEREV, L.V., red.; ZUBAREV, N.N., red.; KREYTER, V.M., red.; MOKROUSOV, V.A., red.; SOLOV'YEV, D.V., red.; KHRUSHCHOV, N.A., red.; FEDOROVA, L.N., red.izd-va; IVANOVA, A.G., tekhn.red.

[Industry's requirements as to quality in mineral raw materials; a handbook for geologists] Trebovaniia promyshlennosti k kachestvu mineral'nogo syr'ia; spravochnik dlia geologov. Izd.2., perer. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po geol. i okhrane nedr. No.66. [Coal] Ugol'. Nauchn.red.G.S.Kalmykov. 1960. 110 p. (MIRA 14:6)

1. Moscow. Vsesoyuznyy nauchno-issledovatel'skiy institut mineral'nogo syr'ya.

(Coal)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065520006-5"

RAMZES, B.Ya.; ZUBAREV, N.M.; CHERNOSVITOV, Yu.L., nauchnyy red.; YERSHOV, A.D., glavnyy red.; SHMANENKOV, I.V., zam.glavnogo red.; GINZBURG, A.I., red.; ZVEREV, L.V., red.; KREYTER, V.M., red.; MOKROUSOV, V.A. red.; SOLOV'YEV, D.V., red.; KHRUSHCHOV, N.A., red.; IZHAILEVA, G.A., red.izd-va; BYKOVA, V.V., tekhn.red.

[Industrial specifications for the quality of raw minerals; handbook for geologists] Trebovaniia promyshlennosti k kachestvu mineral'nogo syr'ia; spravochnik dlia geologov. Izd.2., perer. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po geologii i okhrane nedr. No.2. [Quartz sand] Pesok kvartsevyi. Nauchn.red. IU.L.Chernosvitov. 1955. 55 p. (MIRA 13:7)

1. Moscow. Vsesoyuznyy nauchno-issledovatel'skiy institut mineral'nogo syr'ya.

(Sand)

MILOVANOV, G.N.; CHERNOSVITOV, Yu.L.; GINZBURG, A.I., nauchnyy red.; YERSHOV, A.D., glavnyy red.; ZVEREV, L.V., red.; ZUBAREV, N.N., red.; KREYTER, V.M., red.; MOKROUSOV, V.A., red.; SOLOV'YEV, D.V., red.; KHRUSHCHOV, N.A., red.; SHMANENKOV, I.V., red.; IZRAILEVA, G.A., red.izd-va; IVANOVA, A.G., tekhn.red.

[Industry's requirements as to the quality of mineral raw material; handbook for geologists] Trebovaniia promyshlennosti k kachestvu mineral'nogo syr'ia; spravochnik dlia geologov. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po geol. i okhrane nedr. No.51. [Rare earth elements] Redkozemel'nye elementy. Izd.2., perer. 1959. 58 p. (MIRA 12:12)

1. Moscow. Vsesoyuznyy nauchno-issledovatel'skiy institut mineral'nogo syr'ya.

(Rare earths)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065520006-5

ZUBAREV, N.N.

Insulating material of Russian vermiculite. N. N. Zubarev. *Trans. All-Union Sci. Research Inst. Econ. Mineral. No. 146*, 16-44 (1939). — The vermiculite deposits in the Urals are described. On increase of the temp. of firing from 400° to 1000° the bulk wt. of the vermiculite showed a decrease. The duration of firing had less effect on the bulk wt. But at very high temps. the product became very brittle and the brittleness increased with prolonged firing. The noncemented product is not suitable for heat and sound insulation and as filler between walls because of its tendency to settle. The bulk wt. of the fired product increased sharply on the addn. of large amts. of binders and also by raising the molding pressure. Best results were obtained with a so-called "water resistant" casein adhesive in the manuf. of vermiculite products intended for use at not over 120-130°, bakelite resin for temp. of 250-300°, and sol. glass for 900° and even 1000°. The min. amt. of casein adhesive required to give proper mech. strength was about 7-8% and 8-10% of bakelite and sol. glass. Higher amts. of binders increased the mech. strength but they also increased the hygroscopicity and reduced the heat resistance (organic binder). Vermiculite products cemented with sol. glass were tested at 900-1200° and the results show that the effect of the temp. is confined to the surface layer only. The vermiculite products were found to be equal to specimens imported from the U. S.

H. Z. Kaun ch

ASM SLA METALLURGICAL LITERATURE CLASSIFICATION

BUTKEVICH, T.V.; YERSHOV, A.D., glav. red.; CHERNOSVITOV, Yu.L., zamestitel' glav. red.; SHMANENKOV, I.V., zamestitel' glav. red.; GINZBURG, A.I., red.; ZVEREV, L.V., red.; ZUBAREV, N.N., red.; MOKROUSOV, V.A., red.; SOLOV'YEV, D.V., red.; TROYANOV, A.T., red.; KHRUSHCHEV, N.A., red.; STEPANOV, I.S., nauchnyy red.; ROZHKOVA, L.G., red. izd-va; IYERUSALIMSKAYA, Ye.S., tekhn. red.

[Industry's requirements as to the quality of mineral raw materials; handbook for geologists] Trebovaniia promyshlennosti k kachestvu mineral'nogo syr'ia; spravochnik dlia geologov. Izd. 2., perer. Moskva, Gos. nauchno-tekhn. izd-vo lit- ry po geol. i okhrane nedr. No. 43. [Tungsten] Vol'fram. 1960. 61 p. (MIRA 14:5)

1. Moscow. Vsesoyuznyy nauchno-issledovatel'skiy institut mineral'nogo syr"ya.

(Tungsten)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065520006-5

PROCESSES AND PROPERTIES INDEX

ZUBAREV, N.N.

C4

13

Uses and technology of phlogopite. E. K. Lashev and N. N. Zubarev. *Trans. All-Union Sci. Research Inst. Econ. Mineral* (U. S. S. R.) No. 150, 3-34 (1939)(English summary, 348-50). The phlogopite varieties mined at Slyudyanka (world's richest deposit) include the pale, amber, "silver", "golden" and dark phlogopite. These differ little from each other in regard to hardness (2.5-2.7 by the Mohs scale), mech. strength, flexibility, resistance to high temp., dielec. strength (110-190 kv. mm.) and dielec. losses (tan δ = 0.10-0.20). The MgO content averages 25%, and FeO, Fe_2O_3 and H_2O range from 1.04, 1.84 and 0.58%, resp., for amber-colored phlogopite, to 3.33, 0.80 and 2.00% for the soft (hydrated) varieties. The crude phlogopite is split, trimmed, sorted and then split again into fine laminae, all work being manual. The laminae are cemented together to produce sheet mica. Punched shapes, e. g., disks, are used for microphones, elec. insulation, etc. The waste in processing at the mine amounts to 80-85%, some of it being salvaged for use in various industries after grinding into powder. B. C. Metzner

A S M - S L A METALLURGICAL LITERATURE CLASSIFICATION

STEPANOV, I.S.; CHERNOSVITOV, Yu.L., nauchnyy red.; YERSHOV, A.D., glavnyy red.; GINZBURG, A.I., red.; ZVEREV, L.V., red.; ZUBAKHIN, N.N., red.; KREYTER, V.M., red.; MOKROUSOV, V.A., red.; SOLOV'YEV, D.V., red.; KHRUSHCHOV, N.A., red.; SHMANENKOV, I.V., red.; STOLYAROV, A.G., red.; IVANOVA, A.G., tekhn.red.

[Industrial requirements as to the quality of mineral raw materials; handbook for geologists] Trebovaniia promyshlennosti k kachestvu mineral'nogo syr'ia; spravochnik dlia geologov. Izd.2., perer. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po geol. i okhrane nedr. No.46. [Rubidium and cesium] Rubidii i tseziі. Nauchn.red. IU.L. Chernosvitov. 1960. 33 p. (MIRA 14:2)

1. Moscow. Vsesoyuznyy nauchno-issledovatel'skiy institut mineral'nogo syr'ya.
(Rubidium) (Cesium)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065520006-5"

VESELOVSKIY, V.S.; BERLING, N.I., nauchnyy red.; YERSHOV, A.D., glavnyy red.; CHERNOSVITOV, Yu.L., zam.glavnogo red.; SHMANENKOV, I.V., zam. glavnogo red.; GINZBURG, A.I., red.; ZVEREV, L.V., red.; ZUBAREV, N.N., red.; KREYTER, V.M., red.; MOKROUSOV, V.A., red.; SOLOV'YEV, D.V., red.; KHRUSHCHOV, N.A., red.; STOLYAROV, A.G., red.izd-va; IVANOVA, A.G., tekhn.red.

[Industry's requirements as to the quality of mineral raw materials; handbook for geologists] Trebovaniia promyshlennosti k kachestvu mineral'nogo syr'ia; spravochnik dlia geologov. Izd.2., perer. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po geol. i okhrane nedr. No.3. [Graphite] Grafit. Nauchn.red. N.I.Berling. 1960. 44 p. (MIRA 13:9)

1. Moscow. Vsesoyuznyy nauchno-issledovatel'skiy institut mineral'nogo syr'ya.
(Graphite)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065520006-5"

BORZUNOV, V.M.; PETROV, V.P., nauchnyy red.; YERSHOV, A.D., glavnyy red.; CHERNOSVITOV, Yu.L., zam.glavnogo red.; SHMANENKOV, I.V., zam. glavnogo red.; GINZBURG, A.I., red.; ZVEREV, L.V., red.; ZUBAREV, N.N., red.; KREYTER, V.M., red.; MOKROUSOV, V.A., red.; SOLOV'YEV, D.V., red.; KHRUSHCHOV, N.A., red.; STOLYAROV, A.G., red.izd-va; IVANOVA, A.G., tekhn.red.

[Industry's requirements as to the quality of mineral raw materials; handbook for geologists] Trebovaniia promyshlennosti k kachestvu mineral'nogo syr'ia; spravochnik dlia geologov. Izd.2., perer. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po geol. i okhrane nedr. No.12. [Feldspars] Polevoshpatovoe syr'e. Nauchn.red. V.P.Petrov. 1960. 25 p. (MIRA 13:9)

1. Moscow. Vsesoyuznyy nauchno-issledovatel'skiy institut mineral'nogo syr'ya.

(Feldspar)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065520006-5"

ZUBAREV, N. N.

ZUBAREV, N. N. - KAND. TEKHN. NAUK

Vsesoyuznyy nauchnoissledovatel'skiy institut stroitel'noy keramiki.

Razrabotka i proverka metoda elektrostaticheskogo obogashcheniya myasoyedovskikh glin i vyyavleniye tekhniko-ekonomicheskikh pokazateley etogo metoda. Page 97

SO: Collection of Annotations of Scientific Research Work on Construction, completed in 1950, Moscow, 1951

SOKOV, Yu.F.; PUTILOVA, Z.D.; VAKULENKO, A.A.; ZUBAREV, N.P.

Extracting aromatic hydrocarbons using a rotor-disk contractor.
Trudy BashNII NP no.6:207-217 '63. (MIRA 17:5)

BULYCHEV, Vasiliy Vasil'yevich; ZUBAREV, M.S., otv.red.; ROMANOVA, L.M., red.izd-va; SABITOV, A., tekhn.red.; IL'INSKAYA, G.M., tekhn.red.

[Crushing machine operator] Mashinist drobilki. Moskva, Gos. nauchno-tekhn.izd-vo lit-ry po gornomu delu, 1960. 302 p. (MIRA 13:5)

(Crushing machinery) (Ore dressing)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065520006-5"

ZUBAREV, P.D., inzh.

Making slag wool of fused furnace slags. Energ.stroi. no.15:38-42 '59. (MIRA 13:8)

1. Proyektnoe byuro tresta "Donbassenergostroy". (Mineral wool)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065520006-5"

GEL'MAN, Ye.A., inzhener; ZUBAREV, P.D., inzhener.

Movable bridge for constructing the underground part of the main body of state district electric power stations. Elek.sta. 26 no.12:30-35 D '55. (MLRA 9:4)
(Concrete construction) (Bridges)

[redacted], Zubarev, PD

AID P - 4051

Subject : USSR/Power

Card 1/1 Pub. 26 - 9/33

Authors : Gel'man, E. A. and P. D. Zubarev, Engs.

Title : A mobile bridge at the construction of the underground section of the powerhouse.

Periodical : Elek. sta., 12, 30-35, 1955

Abstract : A detailed account of the construction of an unnamed power plant with the use of a mobile bridge. The mounting and operation of the bridge are described in great detail. Seven diagrams.

Institution : None

Submitted : No date

ZUBAREV, P.D.

Weight of assembly elements of precast reinforced concrete units for district electric power plants. Prom. stroi. 39 no.5:11-13 '61. (MIRA 14:7)
(Electric power plants)
(Precast concrete construction)

ZUBAREV, P.D.; GORLAYNOV, K.E., doktor tekhn.nauk, prof., red.; GLADYSHEVA, S.A., red.izd-va; RYAZANOV, P.Ye., tekhn.red.; RUDAKOVA, N.I., tekhn.red.

[Making slag wool of primary slag melts; experience of plants in the Donets Basin] Proizvodstvo shlakovoi waty iz pervichnykh shlakovykh rasplavov; iz opyta raboty zavodov v Donbasse. Pod red. K.E.Gorlainova. Moskva, Gos.izd-vo lit-ry po stroit., arkhit. i stroit.materialam, 1960. 87 p. (MIRA 14:6)
(Donets Basin—Mineral wool)

ZUBAREV, P.D., inzh.

Using gantry cranes in assembling reinforced concrete pressureless discharging conduits and metal water pressure-pipes. Energ.stroi. no.4:33-35 '59. (MIRA 13:8)

1. Proyektnaya kontora Donbassenergoproyekta.
(Water pipes) (Cranes, derricks, etc.)

ZUBAREV, P.D., inzhener.

Automatic processes in slag block production. Sbor.mat.o nov.tekh.v stroi. 15 no.9:5-9 '53. (MLRA 6:10)
(Concrete blocks)

ZUBAREV, P. I.

Maximum utilization of machine tools Sverdlovsk, Gos, nauchno, tekhn. izd-vo mashinostroit. litry Uralo-Subirskoe otd-nie 1952. 18p.
Slov, peredovikov proizvodstva) (54-27903)

TJ1165.Z8

ZUBAREV, P.I.

Za maksimal'noe ispol'zovanie stankov; Master mekhan. tsekha krupnykh uzlov Uralmashzavoda o svoem opyte (For the maximum use of machine tools; foreman of the machine shop for large units at the Ural Machine-Building Plant on his experience). Moskva, Mashgiz, 1952. 20 p.

SO: Monthly List of Russian Accessions, Vol. 6, No. 5, August 1953

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065520006-5"

S/129/61/000/001/001/013
E111/E135

AUTHORS: Oding, I.A., Corresponding Member, AS USSR, Zubarev, P.V., Engineer, and Fridman, Z.G., Engineer

TITLE: Polygonization in Metals

PERIODICAL: Metallovedeniye i termicheskaya obrabotka metallov, 1961, No. 1, pp. 2-10

TEXT: Polygonization is the formation in the grain of subgrains with their own orientations. The authors discuss this phenomenon which was first observed in 1932 (Ref.1) and the similar effect called "recrystallization in situ" (Refs 2-5). The paper is mainly a critical literature survey. The authors maintain that polygonization can be correctly explained only on the basis of dislocation theory, as shown schematically in Fig.2.

Fig. 2

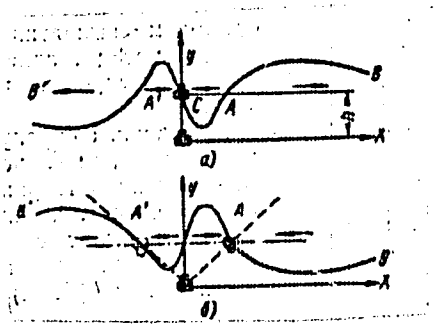
Card 1/4

S/129/61/000/001/001/013
E111/E135

Polygonization in Metals

The authors consider the interaction of two parallel dislocations (Fig.3) and then that of many such dislocations from the aspect of polygonization. They then discuss polygonization in extension. The distortion of slip lines in extension of a crystal is shown schematically in Fig.4. Here temperature plays a major part. Polygonization in metals with various degrees of purity has been

Fig. 3



APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065520006-5"

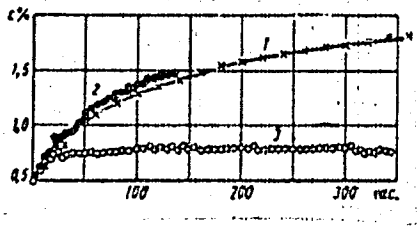
Polygonization in Metals

found to be facilitated by increasing purity (Fig.7 shows polygonal structure in ferrite grains). Figs 5 and 6 (both quoted from Kochendörfer and Ewertz, 'Archiv Eisenhüttenwesen', Vol.30, No.7, 1959) show the temperature-deformation-grain area-grain-number relations. The rate of polygonization is determined by dislocation effects which are themselves subject to various influences (Ref.34). Polygonization occurs in creep (e.g. Refs 13-15, 35-37) and this effect has been studied (Refs 38-49), it being shown (Ref.25) that with a suitable method of polygonization of iron and austenitic steels, creep rate can be greatly reduced. Fig.8 shows the creep curves for Armco iron, σ = 8.5 kg/mm^2, T = 450 °C: (curve 1 - normalised state, $v_p = 1.1 \cdot 10^{-4}$%/h; curve 2 - load relieved and furnace switched off; curve 3 - after mechanical working combined with heat treatment, $v_p = 4.5 \cdot 10^{-5}$%/h). The authors discuss such methods. Polygonization in metals subjected to deformation and heat treatment and during crystallization is also considered. The survey concludes with a section on the influence of polygonization on mechanical properties, the

Polygonization in Metals

authors concluding that substantial improvements are possible.

Fig.8



There are 8 figures and 56 references: 8 Soviet and 48 non-Soviet.
ASSOCIATION: Institut metallurgii AN SSSR
(Institute of Metallurgy, AS USSR)

Card 4/4

ODING, I.A.; ZUBAREV, P.V., inzh.; FRIDMAN, Z.G., inzh.

Polygonization in metals. Metalloved. i term. obr. met. no. 1:2-10 Ja '61. (MIRA 14:1)

1. Institut metallurgii AN SSSR. 2. Chlen-korrespondent AN SSSR (for Oding).

(Metal crystals) (Metallography)

S/020/62/143/005/008/018
B104/B102

AUTHORS: Oding, I. A., Corresponding Member AS USSR, Zubarev, P. V.

TITLE: Variation in the properties of low-carbon steel in long-time annealing

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 143, no. 5, 1962, 1082-1084

TEXT: Two types of low-carbon steel were investigated:

	C	Si	Mn	S	P	N	
Steel I:	0.13	0.215	0.775	0.009	0.029	0.03	(%)
Steel II:	0.08	0.05	0.26	0.03	0.01	0.03	(%)

Samples 1.5 mm in diameter were annealed at 930°C for 3 hrs. Subsequently, they were deformed (0.2 - 30%), soldered in ampoules (10^{-5} mm Hg), and again annealed at 690 ± 5°C up to 7000 hrs. Ultimate strength σ_B, creep strength σ_S, relative elongation δ_B, and microhardness H were determined at room temperature. At first, both types show a decrease of σ_B, σ_S, and

S/020/62/143/005/008/018
B104/B102

H and an increase of δ_B. σ_B and σ_S of I show a sharp increase at 500-hr annealing up to its initial value, while plasticity is reduced. At longer annealing periods, σ_B and σ_S exhibit an oscillatory character. If II is annealed for 400 hrs, σ_S (but not σ_B) behaves similarly to I. Variations in the mechanical properties are not accompanied by a variation in microstructure. There are 3 figures.

ASSOCIATION: Institut metallurgii im. A. A. Baykova Akademii nauk SSSR (Institute of Metallurgy imeni A. A. Baykov of the Academy of Sciences USSR)

SUBMITTED: December 29, 1961

3810h
S/020/62/144/002/013/028
B104/B102

18.8100

AUTHORS: Oding, I. A. Corresponding Member AS USSR, and Zubarev, P. V.

TITLE: Effect of gamma irradiation on the heat resistance of low-carbon steels

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 144, no. 2, 1962, 325-326

TEXT: Steel samples (C 0.08%, Si 0.05%, Mn 0.26%, S 0.03%, P 0.01%) were annealed for three hours at 910°C and irradiated for six hours by 1.25-Mev photons at gamma dose rates of 800 r/sec (integral dose: $17.28 \cdot 10^6$ r). According to formulas taken from F. N. Kharadzha (Obshchiy kurs rentgenotekhniki - General course on X-ray technoloy - 1956, p. 401) it was calculated that 94% of the photons are scattered, part of their energy being transferred to the scattering electrons. Another 5% of the photons generate electron-positron pairs, and less than 1% of them knock out electrons from atoms of the absorbing material. Partial ionization of the atoms, formation of vacancies and dislocated atoms, as well as certain interactions between vacancies and dislocations raise the stability of the

metal. The fatigue strength rose from 19.2 to 20.7 kg/mm^2 after 100 hours of irradiation, whereas the useful life was prolonged by about 17 times. Results corroborate the hypothesis that owing to the interaction of vacancies and dislocated atoms with dislocations, and because of certain lattice distortions , more energy is needed to create fixed dislocations than to create dislocations in tempered material. There are 2 figures and 2 tables.

ASSOCIATION: Institut metallurgii im. A. A. Baykova
(Institute of Metallurgy imeni A. A. Baykov)

SUBMITTED: January 20, 1962

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065520006-5"

S/020/62/144/003/016/030
B108/B102

AUTHORS: Oding, I. A., Corresponding Member AS USSR, and Zubarev, P. V.

TITLE: Increase of the heat resistance of low-carbon steels by mechanical, chemical, and thermal treatment

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 144, no. 3, 1962, 548-550

TEXT: Mechanical and thermal treatment of steel causes dislocations to arise at the domain walls which form various polygons. Impurity atoms at the walls of these dislocations can increase the heat resistance considerably. Experiments were made with low-carbon steel containing (in per cent by weight) 0.8 C, 0.05 Si, 0.26 Mn, 0.03 S, 0.01 P, 0.008 N. The specimens were annealed in evacuated ampoules (10^{-5} mm Hg) for 3 hours at 910°C. Some of the specimens were extended by 2.1% in an Mi-34 Shevenard machine and were then kept at 600°C for 8 hours. Following this, the specimens were saturated with nitrogen by keeping them for 6 hours in a nitrogen atmosphere. Annealing for 110 hours at 550°C made the nitrogen atoms form a "Kotrell sheath" at the polygon walls. Nitrogen

content in the steel after such treatment was 0.47%. Fe_4N needles had formed in the steel which considerably increased its strength. There are 2 figures and 1 table.

ASSOCIATION: Institut metallurgii im. A. A. Baykova Akademii nauk SSSR (Institute of Metallurgy imeni A. A. Baykov of the Academy of Sciences USSR)

SUBMITTED: January 10, 1962

ODING, I.A. (Moskva); ZUBAREV, P.V. (Moskva)

Effect of thermomechanical treatment on certain properties of armco iron. Izv. AN SSSR. Otd. tekh. nauk. Met. i gor. delo no.1:113-118 Ja-F '63. (MIRA 16:3)

(Iron—Hardening)

ACCESSION NR: AT4013919 S/2659/63/010/000/0003/0008

AUTHOR: Oding, I. A.; Zubarev, P. V.

TITLE: Some methods for increasing the heat resistance of steel

SOURCE: AN SSSR. Institut metallurgii. Issledovaniya po zharoprochnym splavam, v. 10, 1963, 3-8

TOPIC TAGS: steel, heat resistance, heat treatment, atomic radiation, annealing, low carbon steel, armco iron

ABSTRACT: An increase in the heat resistance of steels and alloys, i.e., an increase in the useful life in the presence of raised temperatures and lowered rates of creep, is an actual problem of contemporary physical metallurgy. This paper describes three treatments which increase the heat resistance of steels, specifically that of low-carbon steel and armco iron. The results of these treatments are as follows: First, the thermo mechanical treatment of grade 10 steel and armco iron, consisting of deformation of the metal at room temperature with subsequent low-temperature annealing, significantly increases the heat resistance. The creep rate drops by a factor of as much as 35, and the life of the metal is increased tens and hundreds of times. The optimal method for the thermomechanical treatment of low-carbon steel turns out to be a 5% deformation with subsequent

Card 1/2

ACCESSION NR: AT4013919

annealing at 550C. Second, a new type of treatment of metals is proposed. This method of mechano- chemico-thermal treatment consists of polygonization with subsequent chemico-thermal treatment and low-temperature annealing. Grade 10 steel, after such treatment, has a life 10 times as long at 450C as steel which has been nitrided and annealed at low temperatures. Third, grade 10 steel, after γ-radiation (800 roentgen/sec for 6 hours), has a life 17 times as long at 450C as steel before treatment. Orig. art. has: 6 figures and 2 tables.

ASSOCIATION: Institut metallurgii AN SSSR (Institute of Metallurgy AN SSSR)

SUBMITTED: 00 DATE ACQ: 27Feb64 ENCL: 00

SUB CODE: MM NO REF SOV: 002 OTHER: 008

Card 2/2

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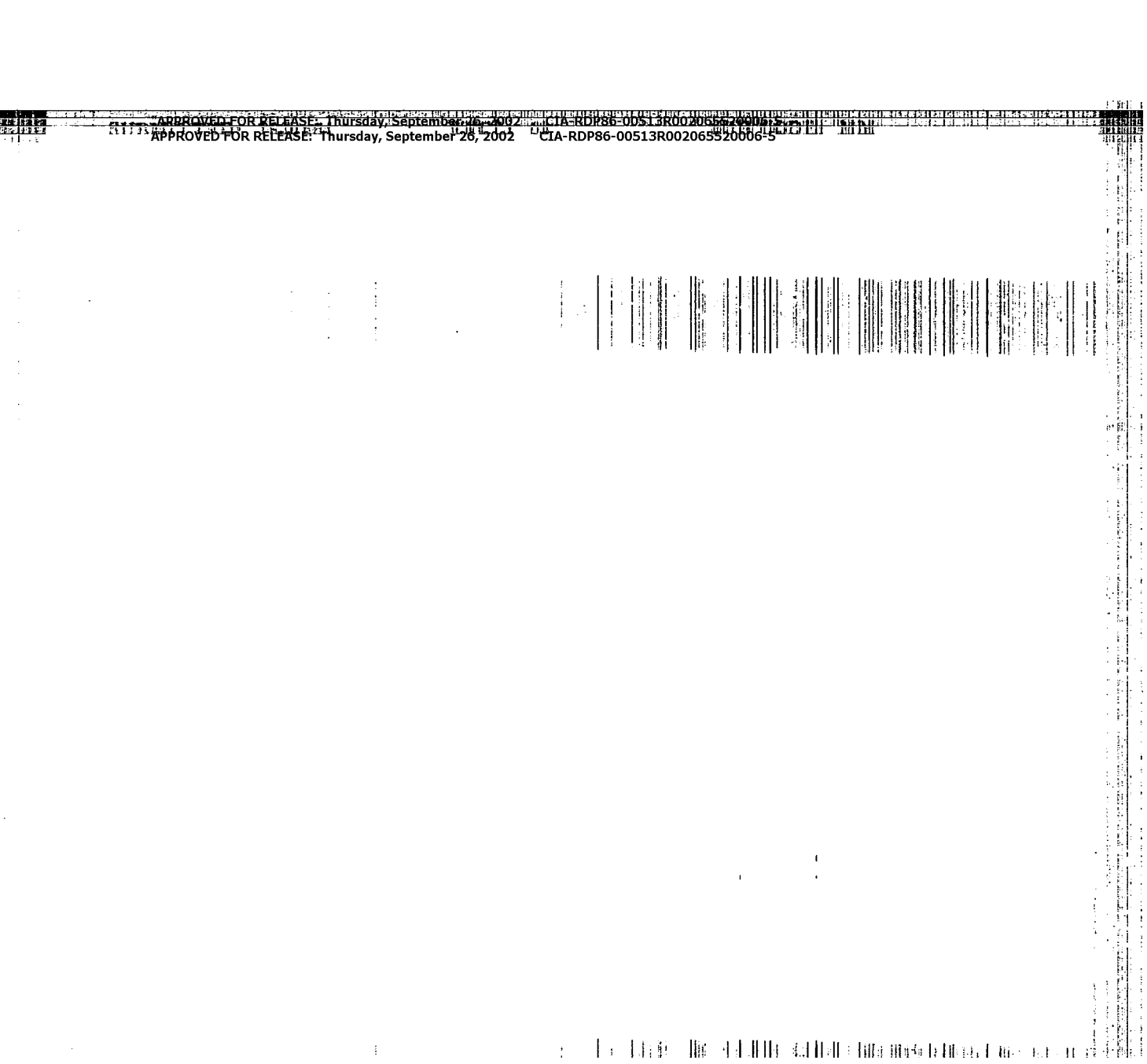
APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065520006-5



APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065520006-5

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065520006-5"

L 7869-66 EWT(m)/EWA(d)/EWP(t)/EWP(z)/EWP(b) MJW/JD

ACC NR: AP5026366 SOURCE CODE: UR/0370/65/000/005/0170/0172

AUTHOR: Zubarev, P. V. (Moscow)

ORG: none

TITLE: Effect of cyclic heat treatment on the heat-resistance of 1Kh18N9 steel

SOURCE: AN SSSR. Izvestiya. Metally, no. 5, 1965, 170-172

TOPIC TAGS: steel, stainless steel, austenitic steel, steel heat treatment, cyclic heat treatment, heat resistant steel, steel rupture life, steel heat resistance, 1Kh18N9 steel

ABSTRACT: The 1Kh18N9 steel was tested for the effect of cyclic heat treatment (CHT) on heat-resistance. Steel specimens were annealed at 1150C for 20 min, water quenched, aged at 700C for 20 hr, and then subjected to cyclic treatment and repeated heating to 1000, 800, or 600C followed by water quenching. Stress-rupture tests at 600C showed that CHT at 800 or 1000C reduces the rupture life. Only CHT at 600C increased the rupture life. The maximum effect was observed at 5—10 cycles. However, CHT increased the rupture life at stresses above 24 kg/mm^2; at stresses below 24 kg/mm^2 the effect of CHT becomes negative. Orig. art. has: 2 figures and 1 formula. [WW]

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Card 1/1 UDC: 669.14.018.44-157.9

IVANOVA, V.S.; GORODIYENKO, L.K.; GEMINOV, V.N.; ZUBAREV, P.V.; FRIDMAN, Z.G.; LIBEROV, Yu.P.; TERENT'YEV, V.F.; VOROB'YEV, N.A.; KUDRYASHOV, V.G.; BERLIN, Ye.N., red.

[Role of dislocations in the hardening and the failure of metals] Rol' dislokatsii v uprochnenii i razrushenii metallov. Moskva, Nauka, 1965. 179 p. (MIRA 18:10)

1. Moscow. Institut metallurgii. 2. Laboratoriya prochnosti Instituta metallurgii im. A.A.Baykova, Moskva (for all except Berlin).

L 20683-66

ACC NR: AP6009616 SOURCE CODE: UR/0369/66/002/001/0119/0126

AUTHOR: Ivanova, V. S.; Gordiyenko, L. K.; Fridman, Z. G.; Zubarev, P. V.

ORG: Institute of Metallurgy im. Baykov , Moscow (Institut metallurgii)

TITLE: Mechanothermal treatment as an effective method for increasing the heat resistance of metals and alloys

SOURCE: Fiziko-khimicheskaya mekhanika materialov, v. 2, no. 1, 1966, 119-126

TOPIC TAGS: metal treatment, alloy treatment, mechanothermal treatment

ABSTRACT: Four methods of mechanothermal treatment of metals and alloys (MTO) have been developed. The first method consists of plastic deformation with 1—10% reduction with simultaneous or subsequent polygonization annealing at a temperature below the recrystallization temperature. In the second method, deformation is performed in several steps at elevated temperature followed by polygonization annealing at the same temperature after each step. The third method is a combination of the first or second with nitriding, which brings about a more complete blocking of the dislocation walls. In the fourth method the material is subjected to repeated deformation at room temperature with aging at 100—150C after each deformation. In all four methods the total reduction should be at least 0.2—0.4% but below 10%, since in commercial metals and alloys permanent damage can occur at reductions of 10% and more. On the basis of extensive experiments the conditions of MTO for many structural materials have been

Card 1/2

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determined. For example, 1Kh18N9T steel (AISI-321) deformed with 0.3% reduction, annealed for 24 hr, and tested under a stress of 18 dan/mm^2 (all three at 500C) had a creep rate of $2.5 \cdot 10^{-4}$%/hr compared to $4.8 \cdot 10^{-3}$%/hr for fully annealed steel. EI-395 steel (Timken 16-25-6) deformed with [illegible] reduction, annealed for 50 hr, and tested under a stress of 26 dan/mm^2 (all three at 625C) had a creep rate of [illegible] $5 \cdot 10^{-4}$%/hr compared to $1.6 \cdot 10^{-3}$%/hr after conventional treatment. [illegible] alloy (Nimonic 80A) deformed with [illegible] reduction, annealed for [illegible] hr, and tested under a stress of [illegible] dan/mm^2 (all three at [illegible]) had a creep rate of [illegible]%/hr compared to [illegible]%/hr after conventional treatment. [illegible] titanium alloy deformed with [illegible]% reduction, annealed [illegible] and tested under a stress of [illegible] dan/mm^2 (all three at [illegible]) had a creep rate of [illegible] 10^{-3}%/hr compared to $5.5 \cdot 10^{-3}$%/hr after conventional treatment. MTT does not reduce ductility, and the total elongation in creep and stress-rupture tests remains the same. Orig. art. has: [illegible] figures and 2 tables. [AZ]

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L 27233-66 EWT(m)/T/EWP(t) IJP(c) JD UR/
ACC NR: AM6003229 Monograph

Ivanova, V. S.; Gorodiyenko, L. K.; Geminov, V. M.; Zubarev, P. V.; Fridman, Z. G.; [illegible]; Terent'yev, V. F.; Yermishkin, M. A.; Kudryashov, V. G.

Role of dislocation in the strengthening and failure of metals (Rol' dislokatsii v uprochnenii i razrushenii metallov) Moscow, Izd-vo Nauka, 1965. 279 p. illus., biblio. Errata slip inserted. 4500 copies printed.

TOPIC TAGS: metal, alloy, metal strength, alloy strength, dislocation, dislocation theory, thermomechanical treatment, metal failure

PURPOSE AND COVERAGE: The book is a continuation and development of the ideas of the late Professor I. A. Oding on the theory of dislocations. This theory served as the basis for the elaboration of new methods of strengthening metals and alloys. In the first part of this monograph the role of dislocations in the [illegible] deformation and the generation of flaws [illegible] the theoretical premises for [illegible] the basic treatment and the effect of this treatment on the mechanical properties of metals and alloys under static and cyclic loads are reviewed

TABLE OF CONTENTS:

UDC: 669.018.25:669-17

Card 1/2