

KUZNETSOV, B.A., kand.tekhn.nauk; PODOPRIGORA, A.S., inzh; BYLYA, A.K., inzh.
KADIGROB, F.Ye., inzh.

Research on the process of a wheel slipping onto a rail. Vop. rud.
transp. no.4:270-299 '60. (MIRA 14:3)

1. Dnepropetrovskiy gornyy institut in. Artema.
(Mine railroads)

KADANOV, M.I.; KADIGROBOV, A.M.

Characteristics of the energy spectrum in magnetics. Fiz. met.
i metalloved. 18 no.6:821-825 D '64.

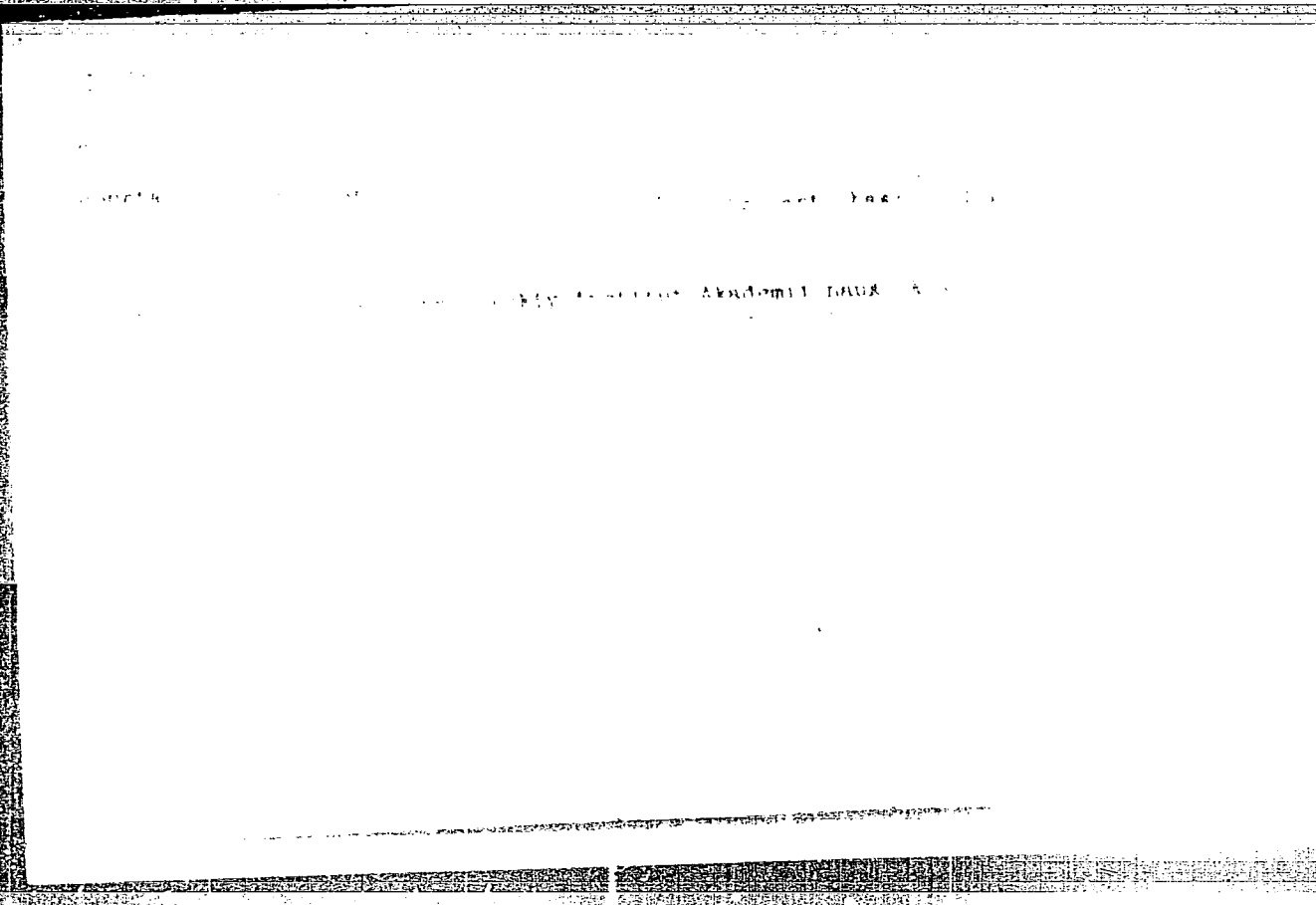
(MIRA 18:3)

GORDON, N.I.; KADIGROBOV, A.M.; SAVCHENKO, M.A.

Nonuniform resonance in an antiferromagnetic plate. Zhur. eksp.
i teor. fiz. 48 no.3:864-868 Mr '65. (MIRA 18:6)

1. Fiziko-tehnicheskiy institut AN UkrSSR.

ABSTRACT: The frequencies of non-uniform resonance in a plate are calculated for
and an antiferromagnet with weak ferromagnetism). It is shown that dipole-dipole
interactions are important in the extreme long-wave part of the spectrum (magneto-
static modes of oscillation), for those values of the field at which reversal of
the magnetic moments of the sublattices of the antiferromagnet occurs. In the case
of the antiferromagnet with weak ferromagnetism, the formulas derived go over in a
limiting case to the case of a uniaxial antiferromagnet with negative anisotropic



ACC NR: AP7005345

SOURCE CODE: UR/0181/01/009/001/0184/0195

AUTHOR: Slutskin, A. A.; Kadigrobov, A. M.

ORG: Physicotechnical Institute, AN UkrSSR, Khar'kov (Fiziko-tekhnicheskii institut AN UkrSSR)

TITLE: Contribution to the theory of interband magnetic breakdown in metals

SOURCE: Fizika tverdogo tela, v. 9, no. 1, 1967, 184-195

TOPIC TAGS: magnetic breakdown, electron energy, electron spectrum, tunnel effect, dispersion equation, wave function

ABSTRACT: The problem of interband magnetic breakdown is solved for arbitrary values of the parameter γ_0 , which enters into the criterion $\gamma_0 \leq 1$ for observing interband breakdown. It is shown that allowance for the genesis of the energy spectrum of the electrons with small distances between bands, connected with the so-called "doubling of the period," makes it possible to investigate completely the interband tunnel effect in a constant and homogeneous magnetic field. The problem is solved in terms of an arbitrary dispersion law and an arbitrary value of the phenomenological parameter Δ , which characterizes the band splitting. A closed analytic relation is obtained for the dispersion law and for the wave functions of the electron as functions of the magnetic field H and the parameter Δ for all values of the probability W of the interband tunnel transition. The formula obtained for the interband magnetic breakdown probability W coincides in the extreme cases of weak and strong breakdown

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ACC NR: AP7005345

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CIA-RDP86-00513R000519830003-2"

with the corresponding expressions given by E. I. Blount (Phys. Rev. v. 126, 1636, 1962) and A. B. Pippard (Phil. Trans. Roy. Soc. (London) v. 256, 317, 1964). The authors thank I. M. Lifshits and M. I. Kaganov for interest in the work and valuable discussion. Orig. art. has: 1 figure and 32 formulas.

SUB CODE: 20/

SUBM DATE 17Jun66/

ORIG REF: 004/

OTH REF: 006

b CODE:

2/2

KADIISKI, E.

"Effect of the mountain pastures on the development of the young cattle."

p. 139 (Izvestia, Vol. 9, 1958, Sofia, Bulgaria).

Monthly Index of East European Accessions (EEAI) LC, Vol. 7, No. 12, Dec. 58.

KADIISKI, E.

"Fattening Calves; Simmenthal Mongrels."

p. 33 (Kooperativno Zemedelie, No. 7, July 1958, Sofia, Bulgaria)

Monthly Index of East European Accessions (EEAI) IG, Vol. 7, No. 11,
Nov. 1958

KADIJEVIC, V.

Military art, its general and specific concept and the criteria of its division in particular branches. p. 85.

VOJNO DELO. Beograd, Yugoslavia. Vol. 11, no. 3, Mar. 1959

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

Uncl.

KADIK, A.A.;

Statistical regularities of the variation of optical properties in
alkaline feldspars of granites. Vest.Mosk.un.Ser.biol., pochv.,
geol., geog. 14 no.4:95-107 '59. (MIRA 13:6)

1. Kafedra petrografii Moskovskogo universiteta.
(Caucasus--Feldspar--Optical properties)

ACC NR: AF7007047

SOURCE CODE: UR/0011/66/000/008/0019/0023

AUTHOR: Kadik, A. A.

ORG: Institute of Geochemistry and Analytical Chemistry im. V. I. Vernadskiy, AN SSSR, Moscow (Institut geokhimii i analiticheskoy khimii)

TITLE: Water-granite melts under conditions of high pressure

SOURCE: AN SSSR. Izvestiya. Seriya geologicheskaya, no. 8, 1966, 19-23

TOPIC TAGS: earth crust, geochemistry, hydrodynamics

ABSTRACT: The system granite-melt -- water is a simple model of magma with a single volatile component -- water, which can be used for analysis of magmatic processes transpiring before the onset of crystallization of the melt. Such a model has been investigated experimentally and theoretically for a number of years at the Institute of Geochemistry and Analytical Chemistry. The derived physicochemical data have been used for solution of problems associated with clarification of the state of water and silicate components in magma melts at high pressures and determination of possible variants of the behavior of magma melts containing water under the influence of a change of pressure, cooling, gravitation and mass exchange with the surrounding medium in a range of depths corresponding to the thickness of the earth's crust in continental

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UDC: 552.11/552.321.1
0128 0451

ACC NR: AP7007047

regions. Emphasis in this paper is on determination of the state of water and silicate components in melts of granitic composition at high water vapor pressures and the conditions of separation of water from a granite melt. For example, on the basis of approximate estimates based on the use of some models of physicochemical hydrodynamics, the quantity of water transported by magma as a result of slow secular mass exchange can attain a considerable value. With the prolonged existence of magma it apparently can exceed the quantity of water which magma can release at the time of differentiation upon reaching a saturated state. In a million years a greater quantity of water can be transported through a surface of 1 km^2 even in the case of a high viscosity of the melt ($\sim 10^6 \text{ P}$) than can be released by $1-10^3 \text{ km}^3$ of melt with a very high content of water ($\sim 10\%$ by weight) at the time of its total crystallization. Orig. art. has: 2 figures and 2 formulas. [JPRS: 39,718]

SUB CODE: 08, 07, 20

Cont 2/2

A.A. KADIK (USSR)

"Estimation of probable significance of gravitation during magma differentiation in homogeneous conditions.

Report presented at the Conference on Chemistry of the Earth's Crust, Moscow, 14-19 Mar 63.

KHITAROV , N.I., red.; KADIK, A.A., red.

[Geochemical studies under conditions of increased pressures and temperatures] Geokhimicheskie issledovaniia v oblasti povyshennykh davlenii i temperatur; sbornik statei. Moskva, Nauka, 1965. 201 p. (MIRA 18:9)

1. Akademiya nauk SSSR. Institut geokhimii i analiticheskoy khimii. 2. Chlen-korrespondent AN SSSR (for Khitarov).

KADIK, A.A.; KHITAROV, N.I.

Effect of pressure on the mass transfer between a magmatic melt
and the water of external media. Geokhimiia no.5:507-518 My.
'65. (MIRA 18:9)

1. Institut geokhimii i analiticheskoy khimii imeni Vernadskogo
AN SSSR, Moskva.

KHITAROV, N.I.; KADIK, A.A.; LEBEDEV, Ye.B.

Estimation of the thermal effect of water separation from melts
of acid composition based on the albite-water system. *Geokhimiia*
no.7:619-630 J1 '63. (MIRA 16:9)

1. Vernadsky Institute of Geochemistry and Analytical Chemistry,
Academy of Sciences, U.S.S.R., Moscow.
(Thermochemistry) (Albite) (Water)

FEL'DMAN, V.Ya.; KADIK, F.A.i. KOMAROV, A.S.; BERZON, A.A.

Determining air consumption during the operation of the MPK-1
loading machine. Ugol' 35 no. 12:11 D '60. (MIRA 14:1)
(Coal mining machinery--Pneumatic driving)

SHKOL'NIK, L.M.; SHAKHOV, V.I.; KUDRYAVTSEV, I.V., doktor tekhn.
nauk, prof., retsenzent; KADILIN, V.P., inzh., retsenzent;
FRID, L.I., inzh., red.

[Technology and equipment for hardening and finishing parts
by burnishing] Tekhnologiya i prisposobleniya dlia uproch-
neniya i otdelki detalei nakatyvaniem. Moskva, Mashino-
stroenie, 1964. 183 p. (MIRA 17:6)

KADILIN, Valeriy Pavlovich, inzh.; MIT'KIN, Arkadiy Nikolayevich, inzh.;
VAYNTRAUB, D.A., red.; FREGER, D.P., red.izd-va; GVIRTS, V.L.,
tekhn. red.

[Practice of the Research Institute of the Automobile Industry
and of the Likhachev Automobile Plant in cold extrusion of
steel parts] Opyt NIITavtoproma i Avtomobil'nogo zavoda im.
I.A.Likhacheva po kholodnomu vydavlivaniyu stal'nykh detalei.
Leningrad, 1963. 17 p. (Leningradskii dom nauchno-tekhnicheskoi
propagandy. Obmen peredovym opytom. Seriya: Kovka i shtampovka,
no.1) (MIRA 16:5)

(Extrusion (Metals))

KADIL'NIKOV, A. P.

MEZHOV, I.A., inzhener-nachal'nik; BUDASHKIN, P.P., inzhener; BARANOV, V.N., inzhener; SKUYEV, V.I., inzhener; KADIL'NIKOV, A.P., inzhener; DERKACH, I.M., inzhener; KONDRAT'YEVA, O.F., tekhnik; GURKIN, V.I., kandidat tekhnicheskikh nauk; SOLOV'YEVA, M.S., inzhener; UDOD, V.Ya., redaktor izdatel'stva; SKVORTSOVA, I.P., redaktor izdatel'stva; BOROVIKH, N.K., tekhnicheskij redaktor

[Model technological charts for sanitary engineering] Tipovye tekhnologicheskie karty po sanitarno-tekhnicheskim rabotam. Moskva, Gos.izd-vo lit-ry po stroit.i arkhit., 1957. 150 p. (MIRA 10:7)

1. Akademiya stroitel'stva i arkhitektury SSSR, Nauchno-issledovatel'skiy institut organizatsii i mekhanizatsii stroitel'stva. 2. Normativnoye byuro Tsudostroya Ministerstva putey soobshcheniya (for Moshov, Budashkin, Baranov, Skuyev, Kadil'nikov, Derkach, Kondrat'yeva) 3. Nauchno-issledovatel'skiy institut organizatsii i mekhanizatsii stroitel'stva (for Solov'yeva, Gurkin)
(Plumbing)

KADIL'NIKOV, M. F., inzh.

The piecework system and its advantages. Transp. stroi. 13
no.3:40-42 Mr '63. (MIRA 16:4)

(Construction workers—Wages)

KADIL'NIKOV, M. F., insh.

Device for coating boards with an antiseptic solution. Transp.
stroil. 13 no.4:65-66 Ap '63. (MIRA 16:4)

(Wood--Preservation)

KADIL'NIKOV, M.F., inzh.

A four-storey house in fifty days. Transp. stroi. lz no.1:
26-29 Ja '62. (MIRA 17:2)

BORODATOV, V.A., kand.biolog.nauk; DEMIDOV, V.F.; DUKHANIN, A.N.; ZHUKOVA, A.I.; KADIL'NIKOV, Yu.V.; KARPECHENKO, Yu.L.; KORZHOVA, Yu.A.; MAKHOVER, Z.I.; PETROV, G.P.; PROSVIROV, Ye.S.; HULEV, N.N.; SOKOLOV, O.A.; SPICHAK, M.K.; KHROMOV, N.S.; SHUIN, V.I., red.; FORMALINA, Ye.A., tekhn.red.

[Study of tuna fish and sardines in the eastern part of the Atlantic Ocean; report on the cruise of the scientific fishery survey expedition of 1957] Issledovanie tuntsa i sardiny v vostochnoi chasti Atlanticheskogo okeana; reisovyi otchet nauchno-poiskovoi ekspeditsii, 1957 g. Moskva, 1959. 158 p. (MIRA 13:6)

1. Moscow. Vsesoyuznyy nauchno-issledovatel'skiy institut morskogo rybnogo khozyaystva i okeanografii.
(Atlantic Ocean--Tuna fish) (Atlantic Ocean--Sardines)
(Fish, Canned)

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 sci-
ence into industry] Vnedrenie novoi tekhniki i dostizhe-
nii nauki v proizvodstvo. Volgograd, 1963. 215 p.
(MIRA 18:3)

1. Volgograd. Institut inzhenerov gorodskogo khozyaystva.

KADIL'NIKOVA, Ye. I.

KADIL'NIKOVA, Ye. I. - "Shemakhinsko-Kobystanskiy Rayon (South-western Caucasus): Physical Geography Outline." Sub 27 Oct 52, Moscow State Pedagogical Inst imeni V. I. Lenin. (Dissertation for the Degree of Candidate in Geographical Sciences).

SO: Vechernaya Moskva January-December 1952

KADILOV, Ye. V.

42673. KADILOV, Ye. V. O Rolli Selezhenki i Znachenii Elokady Retikuloendotelial'noy Sistemy Tush'yu V Vyrabotke Erutselleznykh Agglyutininov. Trudy Yerevansk. Zhdvet. in-ta, Vyp. 10, 1948, s. 93-97.

SO: Letopis' Zhurnal'nykh Statey, Vol. 7, 1949

KADIIOV, Ye. V.

Brucellosis in Farm Animals, Yerevan, Armenian State Press, 1950, 36 pages,
65 kopeks, Copies -- 3,000. In Armenian.

SO: [REDACTED], Report, U-4724, Sept. 30, 1953, [REDACTED]. (Veterinaryiya,
No. 4, Apr. 1951, pp. 60-61, Moscow.)

KADILOV, Ye. V.

"The Question of the Nature of Immunological Processes in Brucellosis. Report No 3: Changes in the Reactivity of the Intestines of Rabbits with Respect to Brucellosis Antigens."

Trudy Yerevanskogo Zooveterinarnogo Inst, Yerevan, Vol 13, 1951, pp 79-84.

SOURCE: Bibliography of infectious diseases from Soviet Periodical: Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 1, 1953.

KADILOV, YE. V.

"On the Characteristics of the Immunological Reactivity of the Organism in Brucellosis. (An Experimental Study)." Min. Agriculture USSR, Yerevan Zootechnical and Veterinary Inst., Yerevan, 1953. (Dissertation for the Degree of Doctor in Veterinary Sciences)

SO: Knizhnaya Letopis', No. 22, 1955, pp 93-105

KADILOV, Ye. V.

Nature of immunological processes in brucellosis. Zhur.mikrobiol.
epid.i immun. no.2:69 F '54. (MIRA 7:3)

1. Iz kafedry epizootologii Yerevanskogo zooveterinarnogo instituta.
(Brucellosis)

USSR / General Biology. Individual Development. Re- B
generation.

Abs Jour: Ref Zhur-Biol., No 23, 1958, 103309.

Author : Kadilov Ye. V.
Inst : Yerevan Zooveterinary Institute.
Title : The Histomorphology of Regenerative Processes in
Splenic Tissues.

Orig Pub: Tr. Yerevansk. zoovet. in-ta, 1956, No 20, 67-78.

Abstract: Through-and-through and wedge-shaped defects were made in the spleens of adult rabbits. If the traumatized spleen was left in the abdominal cavity or was denervated (excision of the connective tissue between the blood vessels and cauterization of the adventitia with phenol), a scar was found at the site of the trauma at the end of a month. If the traumatized organ was put into a skin pouch, a dif-

Card 1/2

KADILOV, Ye. V.

OMIRNSKIY, S.M.; ~~KADILOV, Ye. V.~~; VOSKANYAN, V.B.; ARUTYUNYAN, P.I.;
CHITIAN, S.M.; OGAMBAYAN, R.S.; KHOYETSIAN, R.M.

Materials on the slaughter and anatomical and histological study
of the constitution of young local cattle and their crosses with
Schwyz cattle. Isv. AN Arn. SSR. Biol. i sel'khoz. nauki 10 no.3:
23-34 Mr '57. (MLBA 10:5)

1. Yerevanskiy soveterinarnyy institut.
(Armenia--Cattle--Anatomy)

KADILOV, Ye.V.; BAYBURTTSYAN, A.A.; OVSEPYAN, A.A.

Anatomical and histological characteristics of some organs in farm animals as related to different methods of castration. Izv. AN Arm. SSR. Biol. nauki 14 no.6:7-13 '61. (MIRA 14:10)

1. Kafedry gistologii i operativnoy khirurgii Yerevanskogo soveterinarnogo instituta.

(CASTRATION)

(MUSCLE)

KADILOV, E. V. (Professor) and OVSEPYAN, A. A. (Docent, Yerevan Zooveterinary Institute).

"Essence of the new method for ram castration."
Veterinariya vol. 38., no. 11., November 1961., p. 58

KADILOV, Ye.V., prof.; OVSEPYAN, A.A., dotsent

Essence of the new method for the castration of ram lambs.
Veterinariia 38 no.11:58-59 N '61 (MIRA 18:1)

1. Yerevanskiy sooveterinarnyy institut.

KADILOV, Ye.V. (Yerevan, ul. Nalbandyana, 83, kv.9); OVESEYAN, A.A. (Yerevan,
ul. Kirova, 15, kv. 119)

Stimulation of the regeneration processes of the skin. Arkh.anat.,
gist. i embr. 46 no.4:38-41 Ap '64.

(MIRA 18:5)

1. Kafedra gistologii (zav. - prof. Ye.V.Kadilov) Yerevanskogo
zooveterinarnogo instituta.

TSVETAYEV, A.A., otv. red.; KADIL'NIKOV, I.P., red.; USTINOVA, A.G.,
red.

[Regional study; materials of the Sixth All-Urals Conference
on the Geography and Conservation of Nature] Kraevedenie;
materialy Vseural'skogo soveshchaniya po voprosam geografii i
okhrany prirody. Ufa, Bashkirskii gos. univ. im. 40-letia
Oktiabria, 1961. 51 p. (MIRA 17:5)

1. Vseural'skoye soveshchaniye po voprosam geografii i
okhrany prirody. 6th.

KADIE'NTROV, M.F., inzh.

Chalky cement patty. Trans. stroi. 13 no. 12060-01 0163
(MIRA 27 07)

KADIL'NIKOV, M.F., inzh.

Wood and steel crane tracks. Transp. stroi. 13 no.1:51-52 Ja '63
(MIRA 18:2)

KADIL'NIKOV, M.F., inzh.

Multipurpose grease for forma. Transp.stroi. 13 no.10:68-69
0 '63. (MIRA 17:8)

L 45683-56 ENT(m)/ENT(s)/T VE'EM
ACC NR: AP6020391 SOURCE CODE: UR/0204/66/006/001/0071/0074

AUTHOR: Turyayev, I. Ya.; Grinenko, S. B.; Kadilova, I. L.; Kozorezov, Yu. I.; 29
Golubova, E. Ye.; Zhupanenko, V. V. B

ORG: Institute of Chemistry of High Molecular Compounds, AN UkrSSR (Institut khimii vysokomolekulyarnykh soyedineniy AN UkrSSR)

TITLE: Effect of oxides of various metals on the oxidative dehydrogenation of iso-
pentane into isoprene with the participation of iodine

SOURCE: Neftekhimiya, v. 6, no. 1, 1966, 71-74

TOPIC TAGS: transition metal oxide, dehydrogenation, isopentane, isoprene, iodine

ABSTRACT: Comparative data were obtained on the oxidative dehydrogenation of isopentane into isoprene with the participation of iodine and various metal oxides. The reaction products were analyzed by gas-liquid chromatography. From the standpoint of the isoprene yield from the dehydrogenation in the presence of iodine and air, the oxides are arranged in the following sequence:



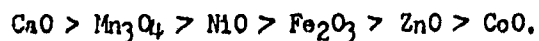
and when air is replaced by nitrogen,

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UDC: 547.315.2:547.215-125:542.941.8:[546.15+546.3-31

L 4566.5-22

ACC NR: AP6020391



The best characteristics are obtained when calcium oxide is used as the absorbing agent for hydrogen iodide. When 0.5 mole of iodine per mole of isopentane and one mole of oxygen per mole of iso-C₅H₁₂ are supplied at 530° and the contact time is 1.3 sec, the isoprene yield is about 62 mole % in one operation for a selectivity of the process of 82 mole %. Orig. art. has: 1 figure and 2 tables.

SUB CODE: 07/ SUBM DATE: 01Feb65/ ORIG REF: 003/ OTH REF: 001

Card 2/2 YMT

BOLKHOVITINOVA, Ye. N., kand. tekhnicheskikh nauk; KADIN, A. L.;
KLENINA, Ye. K.; EYNGORN, A. G., kand. med. nauk (Moskva)

Reactions of the brain to silver and zirconium clips; experi-
mental morphological study. Vop. neurokhirurgii no. 3:57-58 '62.
(MIRA 15:7)

1. Nauchno-issledovatel'skiy institut eksperimental'noy khirurgi-
cheskoy apparatury i instrumentov Ministerstva zdravookhraneniya
SSSR.

(BRAIN—SURGERY) (SILVER) (ZIRCONIUM)

GOL'DINA, B.G.; KADIN, A.L.

Comparative evaluation of plastics in replacing defects of the dura mater. Vop. neirekhir. no.1:46-50 '65. (MIRA 18:10)

1. Meditsinskiy otdel (zav. - prof. A.M. Geselevich) Nauchno-issledovatel'skogo instituta eksperimental'noy khirurgicheskoy apparatury i instrumentov (direktor - M.G. Anan'yev) Ministerstva zdravookhraneniya SSSR, Moskva.

KADIN, I.N.; PANOV, A.V.; SHIRENEL', M.A.

Unit for the study of isothermal transformation by the electric
resistance method. Zav. lab. 26 no.8:1009-1012 '60. (MIRA 13:10)

1. Moskovskiy institut stali im. I.V. Stalina.
(Materials--Thermal properties)

KADIN, L. S.

42721. KADIN, L. S. Opukholi Tipa "Pesochnykh Chasov". Trudy In-ta Ney Rokhirurgii
Im. Burdenko, T. I, 1948, s. 450-80.

SO: Letopis' Zhurnal'nykh Statey, Vol. 7, 1949

Evans, L. W.

Intervertebral Disk - Hernia

Diagnosis and surgery of hernia of the intervertebral disk., Vop. meirokhir., 16,
no. 1, 1952.

Monthly List of Russian Accessions, Library of Congress, May 1952. UNCLASSIFIED.

VOLODIN, P.A.; ZHURAVLEV, A.M.; IOFAN, B.M.; KADINA, I.G.; PEKAREVA,
N.A.; STRIGALEV, A.A.; MINERVIN, G.B., red.; OSKLEDETS, Z.M.,
red.; PAVLENKO, M.V.; BRUSINA, A.M., tekhn.red.

[New districts of Moscow] Novye raiony Moskvy. Moskva, Gos.
izd-vo lit-ry po stroit., arkhitekt. i stroit.materialam, 1960.
284 p. (MIRA 13:7)

(Moscow--City planning)

DUBOV, S.S.; GINSBURG, V.A.; KADINA, M.A.; RODIONOVA, N.P.; RODKIN, S.A.;
MAKAROV, S.P.; FILATOV, A.S.; YAKUBOVICH, A.Ya.

Appearance of the asO group in vibration and electron spectra.
Zhur.VKHO 6 no.5:596-597 '61. (MIRA 14:10)
(Also compounds—Spectra)

MAYRANOVSKIY, S.G.; PONOMARENKO, V.A.; BARASHKOVA, N.V.; KADINA, M.A.

Structure and polarographic behavior of some iodomethyltrialkyl
(aryl)amines. Izv. AN SSSR Ser. khim. no.11:1951-1956 N 164
(MIRA 18:1)

1. Institut organicheskoy khimii im. N.D. Zelinskogo AN SSSR.

соединениях с гидратированной триалкоксилановой группой

ИЗВЕСТИЯ АН СССР, Извещения, Серия химическая, no. 4, 1964, 65-74

ТЕМАТИКА: химия аллилов, химическая реакция, хлорирование, гидратация

ИЗВЕСТИЯ АН СССР, Извещения, Серия химическая, no. 4, 1964, 65-74

L 54444-65

ACCESSION NR: AP5012449

trifluoropropyl group. Photochemical chlorination of it yields (and a number of related chlorides). Dehydrochlorination of that HCl may be split off by pyridine. In the chlorination it was discovered that if the beta-chlorinating radicals $-SiCl_2$ or $-SiCl_2O_2$ are present in the molecule, $-CF_3$ proves to be the more potent factor. When aluminum chloride is present, dehydrochlorination of trifluoropropyl chlorosilane does not take place. Structures of the reaction products were verified by nuclear magnetic resonance spectra. The composition and properties of the products obtained are tabulated in the article. "The nuclear magnetic resonance spectra were obtained on GF-600N on an INN-C-60 (60 cycles) instrument by V. M. Sheychenko. Gas-liquid chromatograms were obtained by A. D. Eneceva. The authors express their thanks to these individuals." Orig. art. has 1 figure and 3 tables.

ASSOCIATION: Institut organicheskoy khimii im. N. D. Zelinskogo, Akademi nauk SSSR (Institute of Organic Chemistry, Academy of Sciences, USSR)

SUBMITTED: 02.11.65

NO REF 907: 00

Card 2/2

... under the conditions of photochemical chlorination. In the photochemical chlorination of ethyltrichlorogermane, α - and β -chloroethyl-

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UDC: 541.143+546.13+542.957+546.289+546.287
0933 0874

ACC NR: AP7013159

trichloro-germanes were obtained in a 1:4 ratio, in contrast to the 1:2.3 ratio of the α - and β -isomers obtained in the chlorination of ethyltrichlorosilane. The stronger β -orienting ability of the trichloro-germane group in comparison with the trichlorosilane group was thus confirmed. It was found that the latent period of chlorination is substantially shorter for ethyltrichlorosilane than for ethyltrichloro-germane. The ratio of the α - and β -isomers for both ethyltrichloro-germane and ethyltrichlorosilane is fixed at the very start of chlorination and remains comparatively constant during the entire reaction.

Orig. art. has: 1 figure and 1 table. [JPRS: 40,422]

Cold 2/2

KADINGER, B.

Electron-tube circuits without the source of anode current, p. 124,
RADIOTECHNIKA, (Magyar Onkentes Hovedelmi Szovetseg) Budapest, Vol.
5, No. 6, June 1955

SOURCE: East European Accessions List (EEAL) Library of Congress,
Vol. 4, No. 12, December 1954

KADINGER, B.

Electron-tube contacts without a source of anode current. 11. (To be contd.) p. 148. RADIOTECHNIKA. Budapest. Vol. 5, No. 7/8, July/Aug. 1955

SOURCE: EAST EUROPEAN ACCESSIONS LIST (EEAL) VOL. 5, No. 6 June 1956

KADINGER, B.

Electron tube contacts without a source of anode current. (To be contd.)
p. 194. RADIOTECHNIKA. BUDAPEST. Vol. 5, no. 9, Sept. 1955.

SOURCE: East European Accessions List (EEAL) LC. Vol. 5, no. 2, Feb. 1956

KADINGER, E.

KADINGER, E. Electron-tube contacts without a source of anode current. p. 218.

Vol. 5, No. 10, Oct. 1955.

RADIOTECHNIKA.

TECHNOLOGY

Budapest, Hungary

So: East European Accession, Vol. 5, No. 5, May 1956

S/194/62/000/011/048/062
D413/D308

AUTHOR: Kadinger, Béla

TITLE: A synchronized multivibrator

PERIODICAL: Referativnyy zhurnal, Avtomatika i radioelektronika,
no. 11, 1962, 34, abstract 11-7-68m (Hung. pat., cl.
21g, 29-35, no. 148294, Jun. 20, 1961)

TEXT: The patent covers two circuits for a synchronized multivibrator, the control grids being connected through a resistor. The synchronization is achieved by means of a positive-going pulse applied through a resistor to the control grid of one of the valves. (Műszeripari Kutató Intézet.) [Abstracter's note: Complete translation.]

Card 1/1

CHUYKO, N. M., KADINOV, YE. I., TREGUBENKO, A. F.
Dniepropetrovsk Institute of Metallurgy.

"Influence of the Vacuum Stream Treatment on the Quality of MX 15-Steel."

paper presented at Second Symposium on the Application of Vacuum Metallurgy.

1-6 July 1958 Moscow

66502

SOV/137-59-7-14586

18.3200

Translation from: Referativnyy zhurnal. Metallurgiya, 1959, Nr 7, p 54 (USSR)

AUTHORS: Chuyko, N., Kadinov, Ye., Rutkovskiy V., Zabaluyev, I., Bobkov, T., Kurganov, V., Antipenko, G.

TITLE: New Technology in Electric Smelting of Ball Bearing Steel

PERIODICAL: Tekhn.-ekon. byul. Sovnarkhoz Zaporozhsk. ekon. adm. r-na, 1958, Nr 1, pp 6-10

ABSTRACT: A new method of ball-bearing steel smelting in high-capacity (50 t) arc furnaces was developed at the "Dneprospetsstal" Plant. The amount of burnt-out C during the oxidation stage must be $\leq 0.25\%$; the temperature of the metal prior to slag skimming must be about the same as the temperature of teeming ($1,550^{\circ}$ - $1,570^{\circ}$ C) as measured by the plunged thermocouple. Reduction takes place under white slag. Preliminary deoxidation of the slag is performed by carbonization of the metal by 0.03-0.05% C with the use of dry ground coke. Fe-Cr and Fe-Si are added until the slag is being formed. The slag is formed through lime, refractory clay and fluorspar in a 6:2:1 proportion and amounting to 3-4% of the metal weight. Deoxidation is carried out by 3-4 blends of ground coke, 75% Fe-Si powder, and lime. 0.5 kg/t aluminum powder is added to the

Card 1/2

66502

New Technology in Electric Smelting of Ball Bearing Steel

SOV/137-59-7-14586

final mixture 10 minutes prior to teeming. The slag, before removing, contains CaO > 55.0%; CaC₂ ≤ 0.5% and FeO ≤ 0.4%. The metal temperature is 1,545-1,565°C. 0.5 kg/t is added by using a bar fixed at the ladle rim. In teeming process, first, most of the slag and then the metal with the slag are removed. Refining extends over 1 hour 30 minutes. Contamination of the steel by non-metallic impurities does not increase: the average mark for oxides (October 1957) is 2.15 by conventional technology and 2.12 by the new method: it is respectively 2.17 and 2.15 for sulfides. Globular impurities usually do not occur in the new technology. Duration of the smelting time is reduced by 10%; electric power consumption is reduced by 50-70 kw-hrs/ton.

V.B. ✓

Card 2/2

KHITRIK, S.I., doktor tekhn. nauk; ~~KADINOV, Ye.I., inzh.~~; BORODULIN,
G.M., inzh.; TREGUBENKO, A.F., inzh.; YATSKEVICH, I.S., inzh.;
DEMIDOV, P.V., inzh.; FRANTSOV, V.P., inzh.; SMOLYAKOV, V.F.,
inzh.; MALIKOV, G.P., inzh.; DOVGIL, M.M., inzh.; MOSHKEVICH,
Ye.I., inzh.; RABINOVICH, A.V., inzh.

Reducing chromium losses in the manufacture of acid-resistant
and stainless steels in electric arc furnaces. Met. i gornorud.
prom. no.1:17-20 Ja-F '62. (MIRA 16:6)
(Steel, Stainless—Electrometallurgy)

KADINOV, G. I.

113

PHASE I BOOK EXPLOITATION

SOV/5411

Konferentsiya po fiziko-khimicheskim osnovam proizvodstva stali. 5th,
Moscow, 1959.

Fiziko-khimicheskiye osnovy proizvodstva stali; trudy konferentsii
(Physicochemical Bases of Steel Making; Transactions of the
Fifth Conference on the Physicochemical Bases of Steelmaking)
Moscow, Metallurgizdat, 1961. 512 p. Errata slip inserted.
3,700 copies printed.

Sponsoring Agency: Akademiya nauk SSSR, Institut metallurgii imeni
A. A. Baykova.

Responsible Ed.: A. M. Samarin, Corresponding Member, Academy
of Sciences USSR; Ed. of Publishing House: Ya. D. Rozentsveyg.
Tech. Ed.: V. V. Mikhaylova.

Card 1/16

115

Physicochemical Bases of (Cont.)

SOV/5411

PURPOSE: This collection of articles is intended for engineers and technicians of metallurgical and machine-building plants, senior students of schools of higher education, staff members of design bureaus and planning institutes, and scientific research workers.

COVERAGE: The collection contains reports presented at the fifth annual convention devoted to the review of the physicochemical bases of the steelmaking process. These reports deal with problems of the mechanism and kinetics of reactions taking place in the molten metal in steelmaking furnaces. The following are also discussed: problems involved in the production of alloyed steel, the structure of the ingot, the mechanism of solidification, and the converter steelmaking process. The articles contain conclusions drawn from the results of experimental studies, and are accompanied by references of which most are Soviet.

Card 2/16

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Physicochemical Bases of (Cont.)	SOV/5411	
Bogatenkov, V. F., K. T. Kurochkin, and P. V. Umrikhin. Investigating the Permeability of Basic Open-Hearth Slag to Hydrogen		195
Grigor'yev, V. P., A. F. Vishkarev, B. G. Korolev, Ye. V. Abrosimov, and V. I. Yavoyskiy. Effect of Phosphorus and Manganese on the Surface Tension of Ferrocobalt Alloys		204
Khitrik, S. I., and Ye. I. Kadnuy. Reducing Chromium Losses in Making Stainless Steel With the Use of Oxygen (Blast)		213
[The following persons participated in the research work: A. V. Rabinovich, Yu. V. Chepelenko, V. P. Frantsov, I. P. Zabaluyev, V. F. Smolyakov, P. V. Demidov, M. M. Dovgily, T. M. Bobkov, Ye. I. Moshkevich, A. M. Neygovzen, T. F. Olenich, K. P. Gunaza, B. I. Ziatkina, and Yu. A. Nefedov.]		

PART II. CONVERTER PROCESSES

Baptizmanskiy, V. I. Certain Problems of the Mechanism and
Card 9/18

KADINOV, Ye.I.; RABINOVICH, A.V.; KHITRIK, S.I.

Methods of calculating and results of the material balance in the
smelting of 1Kh18N9T steel. Izv. vys. ucheb. zav.: ~~chern. met.~~ 4
no.8:56-71 '61. (MIRA 14:9)

1. Dnepropetrovskiy metallurgicheskiy institut.
(Steel, Stainless--Metallurgy)

KADINOV, Ye.I.; KHITRIK, S.I.

Effect of basic technological factors on the loss of chromium
during the blowing of a ~~high~~ chromium bath with oxygen.
Izv. vys. ucheb. zav.; chern. met. 5 no.10:50-58 '62.
(MIRA 15:11)

1. Dnepropetrovskiy metallurgicheskiy institut.
(Chromium steel--Metallurgy)
(Oxygen--Industrial applications)

S/148/62/000/011/002/013
E079/E151

AUTHORS: Kadinov, Ye.L., Litvinova, T.I., and Khitrik, S.I.

TITLE: Phase composition of slags during electric refining of stainless steels

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Chernaya metallurgiya, no.11, 1962, 61-69

TEXT: During refining of stainless steels of the type 1X18H9T (1Kh18N9T) in basic arc furnaces by remelting internal scrap, using oxygen for refining, from 15 to 20% of chromium is lost into the slag, due to the incomplete reduction of the chromium from slag, into which it passes during the melting and oxidising periods. In order to find methods of reducing chromium losses, the chemical and mineralogical composition of slag samples taken in the course of two heats carried out according to the specified method (not described) was investigated. The results obtained indicated that the reduction of chromium oxides from the slag at the end of the blowing period cannot take place with existing slag and deoxidation practices. It is necessary to increase the fluidity and basicity of the oxidising slag as well

Card 1/2

Phase composition of slags during ... S/148/62/000/011/002/013
EO79/E151

as to improve the technique of its deoxidation. The most active method by which an adequate slag fluidity can be retained up to the beginning of deoxidation is to decrease the chromium oxide content of the slag. An increase in slag basicity will improve conditions for the reduction of chromium as it will help in the assimilation of chromium spinel crystals by the molten slag and thus increase slag fluidity. It will also limit the formation of chromium silicates which are difficult to reduce, decrease the ratio of Cr/Fe in the slag during its deoxidation, and considerably increase the deoxidising capacity of the silicon. There are 3 figures and 2 tables.

ASSOCIATION: Dnepropetrovskiy metallurgicheskiy institut
(Dnepropetrovsk Metallurgical Institute)

SUBMITTED: January 31, 1961

Card 2/2

S/032/63/029/001/008/022
B104/B186

AUTHORS: Kovtun, M. S., and Kadinov, Ye. I.

TITLE: Determination of chromium oxide in slags of electric stainless steel melts

PERIODICAL: Zavodskaya laboratoriya, v. 29, no. 1, 1963, 35

TEXT: The method is based on the dissolving a slag sample in a mixture of ferrous chloride, hydrochloric acid and hydrofluoric acid. In this process the ferrous chloride oxidizes the bivalent chromium and changes it to chromium chloride, which together with ferrous oxide can be titrated with potassium dichromate. From the content of ferrous oxide in the slag the content of chromium oxide can be calculated. 0.25 - 0.5g slag are dissolved in a 100 ml flask by 20 ml of a mixture which is prepared from 25 ml saturated ferrous oxide solution, 20 ml HF and 50 ml HCl (1.49) in a carbon dioxide stream. The solution is put into a 250 ml flask containing 50 ml cold water and 20 ml H_2SO_4 (1 : 1) titrated with a 0.1 N solution of potassium dichromate in the presence of phenyl anthranilic acid and then the sum of the chromium and ferrous oxide content
Card 1/2

Determination of chromium oxide in ...

S/032/63/029/001/008/022
B104/B186

is calculated. To determine the ferrous oxide 0.2 g slag are dissolved in a platinum bowl by heating it in a mixture of 10 ml HCl (1.19), 5 ml HF and 10 ml H₂SO₄ (1:1) until SO₃ vapors separate. The salts are dissolved in 50 ml hot water. 20 ml of a 20% persulfuric acid solution are added, boiled 10 min and the iron is precipitated with ammonia. The ferrous hydroxide precipitate is filtered off, washed with water until a negative chromate-iron reaction with diphenylamin occurs, then dissolved in HCl (1:5), heated to 50°C. The solution is put into a 100 ml measuring flask to produce a sulfuric acid medium (5 ml H₂SO₄ (1.84) added to 100 ml water). To 2-5 ml of the solution sampled from the measuring flask, 5 ml 30% sulfosalicylic acid and concentrated ammonia are added until the yellow coloring becomes stable. Water is added up to the filling mark, the sample is stirred and colorimeted with an ФЭК-М (FEK-M) device provided with a blue filter. The chromium content in the slag is calculated from the difference.

ASSOCIATION: Dnepropetrovskiy metallurgicheskiy institut
(Dnepropetrovsk Institute of Metallurgy)

Card 2/2

S/148/63/000/002/001/006
E111/E451

AUTHORS: Kadinov, Ye.I., Khitrik, S.I.

TITLE: Refining period in the electric melting of stainless steels

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Chernaya metallurgiya, no.2, 1963, 68-76

TEXT: The main chromium losses during refining in electric melting with oxygen lancing are by transfer to the slag. Among the factors responsible is the formation of $(CrO)_x \cdot SiO_2$. In industrial trials on experimental heats of type 1X18H9T (1Kh18N9T) steel, deoxidation was carried out with type AMK alloy immediately after lancing by adding 0.15 to 0.20% Al, 0.35 to 0.40% Si and about 1.0% Mn of the charge weight. Ferrochromium and lime (15 kg/ton charge) were then added and, after the ferrochromium had melted, the slag was deoxidized with silicon-containing powders (silicon addition 14.5 to 15.0 kg/ton) and lime, giving a basicity $(CaO + MgO) : SiO_2$ of not less than 1.4 and slag chromium content of less than 7%. The high silicon consumption had no significant effect on silicon content in the metal (0.58% average). The Card 1/2

Refining period in ...

S/148/63/000/002/001/006
E111/E451

average chromium content of the slag run off was down to 6.5% (20% with normal practice). These measures together with changes in melting and lancing practice to decrease the amount of chromium oxidized (e.g. by better control of temperature and slagging conditions) raised the chromium recovery from 82.3 to 95% and reduced oxidation losses by more than one-third. No significant complications ensued and heat time was almost unaffected. There are 5 figures and 1 table.

ASSOCIATION: Dnepropetrovskiy metallurgicheskiy institut
(Dnepropetrovsk Metallurgical Institute)

SUBMITTED: May 24, 1962

Card 2/2

ACCESSION NR: AR4027927

S/0137/64/000/002/V040/V040

SOURCE: RZh. Metallurgiya, Abs. 2V263

AUTHOR: Kadinov, Ye. I.; Khitrik, S. I.

TITLE: Reduction of chromium during the electric melting of stainless steel

CITED SOURCE: Nauchn. tr. Dnepropetr. metallurg. in-t, vy*p. 51, 1963, 77-96

TOPIC TAGS: stainless steel melting, chromium reduction, deoxidation

TRANSLATION: A procedure was developed for carrying out a reductive process in the course of melting of type 18-8 steel, which makes it possible to raise the assimilation of Cr from 82.3 to 95% and more. The new procedure requires that (1) after O₂ is blown through the bath, the metal be deoxidized to the maximum possible extent with the alloy Mn-Si-Al (AMK); (2) by increasing the total amount of added lime to 7.0-7.5% of the weight of the metal, the basicity of the slag be raised to 1.4, and (3) that the consumption of silicon deoxidizers in the powder used to deoxidize the slag be increased. When 18-8 steel was made in accordance with the new procedure in 30-t electric furnaces, the quality of the metal was somewhat improved.

V. Shumskiy

Card 1/2

ACCESSION NR: AR4027927

DATE ACQ: 19Mar64

SUB CODE: ML

ENCL: 00

Card2/2

KOVTUN, M.S.; KADINOV, Ye.I.

Methods of determining chromous oxide in slags during the electric
smelting of stainless steel. Nauch. trudy DMI no.51:97-100 '63.
(MIRA 17:10)

L 09114-67 EWT(m)/EWP(t)/ETI IJP(c) JD/WB

ACC NR: AP7002347

SOURCE CODE: UR/0148/66/000/006/0080/0087

39
33
3

AUTHOR: Kamardin, V. A.; Kadinov, Ye. I.; Moshkovich, Ye. I.; Dnepropetrov

ORG: Metallurgical Institute (Dnepropetrovskiy metallurgicheskiy institut)

TITLE: Material balance of titanium in electrical melting of stainless steel

SOURCE: IVUZ. Chernaya metallurgiya, no. 6, 1966, 80-87

Ab

TOPIC TAGS: metal melting, stainless steel, titanium

7

ABSTRACT: Under existing technology of alloying stainless steel with titanium the amount of titanium taken up by the steel usually varies within the limits 35-70%, and averages approximately 50%. To verify and refine the sources of titanium losses in the alloying of stainless steel, and also to arrive at a precise quantitative evaluation of such losses in the over-all losses of titanium, material balances of two industrial melts of the steel Kh18N10T were made.

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The expanded materials, slag, and metal following pouring were weighed. Samples of metal and slag were selected for analysis during the course of melting and pouring. The silicon and aluminum content in the metal were determined by spectral analysis, that of titanium -- colorimetrically, oxygen -- by vacuum melting, nitrogen -- by dissolution and distillation.

Card 1/2 Judging from the fraction of participation of air oxygen in the oxidation of

0925 0639

L 09114-67

ACC NR: AP7002347

titanium, it can be assumed that this source is the chief reason for its instable assimilation. Substantial variations in the assimilation of titanium are evidently a consequence of the different degree of oxidative action of air oxygen as a function of technological factors (physical and chemical properties, the amount of slag, temperature, duration of melt retention after introduction of titanium, etc.)

Sizable sources of the titanium losses are also its oxidation and absorption by the surface layer of the hearth and inclined sides of the furnace, and the oxidation of ferric oxide, manganese, and chromium oxide which enter the slag from the furnace lining. The overall fraction of these losses in the overall titanium loss is 15.9% and 17.8%, and the proportion of losses of titanium resulting from the formation and removal of nitrides from the slag -- 10.2 and 12.1%.

Therefore, to increase the level and stability of assimilation of titanium by the metal being alloyed, it is necessary to decrease or eliminate the oxidative effect of air oxygen in alloying as well as hermetization of the furnace and creation therein of a neutral or reducing atmosphere for the length of time the steel is being alloyed with titanium. Reduction of oxidation of titanium by silicon, oxides of manganese, chromium, and iron is achieved through careful mixing of the reducing slag before adding the titanium alloys.

This work was carried out under the direction of Professor S. I. Khitrika. G. L. Yelinson, I. V. Yefimov, A. V. Gubenko and Ye. V. Lubyanchenko participated in the making of the melts. Orig. art. has: 1 figure, 8 formulas and 5 tables. /JPRS: 37,758/
Card 2/2 net SUB CODE: 11 / SUBM DATE: 06Mar65 / ORIG REF: 014 / OTH REF: 001

KHEYFETS, G.N., kand. tekhn. nauk; KADINOVA, A.S., inzh.

Investigating an axial-type jet, cooling apparatus. Proizv. trub
no.10:86-90 '63. (MIRA 17:10)

S/137/62/000/003/097/191
A006/A191

AUTHORS: Tayts, N.Yu.; Kadinova, A.S.

TITLE: The depth of the quenched layer in jet-cooling of pipes

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 3, 1962, 31, abstract 3D174
(V sb. "Proiz-vo trub", no. 5, Khar'kov, Metallurgizdat, 1961, 171 -
174)

TEXT: The authors analyze the advantages of the method of pipe jet-cooling as compared to the use of a bath. The depth of the quenched layer in jet-cooling depends on the mass of the work piece, water pressure and consumption, and the thermo-physical properties of the quenched metal. The depth of the quenched layer was estimated on the basis of characteristic cooling curves. The authors show the relationship between the distance from the internal to the external pipe surface and the temperature. With the aid of the critical cooling rate in the range of the structural transformations of the metal, the depth of the quenched layer can be determined; if necessary, water pressure and consumption can be regulated, so that the required depth of the quenched layer can be obtained.

N. Yudina

[Abstracter's note: Complete translation]

Card 1/1

BEZVERKHIY, P.A., kand.tekhn.nauk; KADINOVA, A.S., inzh.; TAYTS, N.Yu.,
doktor tekhn.nauk

Investigation of roller hearth furnaces for the normalization of
electrically welded pipe. Stal' 21 no.12:1122-1124 D '61.
(MIRA 14:12)

1. Ukrainskiy nauchno-issledovatel'skiy trubnyy institut.
(Furnaces, Heat-treating)

s/133/60/000/007/014/016

AUTHORS: Tayts, N.Yu., Doctor of Technical Sciences; Kadinova, A.S.,
Engineer

TITLE: Thermotechnical Principles of the Spray Hardening of Tubes

PERIODICAL: Stal, ²⁰1960, No. 7, pp. 655 - 657

TEXT: The conventional hardening method in baths filled with a cooling medium cannot always ensure rapid and uniform cooling of the metal product, especially in large products, such as papers. The application of spray cooling appears to be more effective, because high speed and great uniformity are attainable, also in flow system production and the control is relatively simple. A description is given of the heat exchange taking place when applying spray cooling to oil pipes of high strength after being subjected to high-speed heating. The tests were carried out under industrial conditions with pipes of 73 x 9 mm from 36Г2С6 (36G2S) and 40Х (40Kh) type steels and partly in laboratories on pipe-branches of 73 - 63 mm in diameter and 3.5, 5, 7 and 9 mm wall thickness. In both test series the nozzle type cooling apparatus of the UkrNITI has been applied. The curves indicating the test results clearly show that at a constant water pressure (1.5 kg/cm²)

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S/133/60/000/007/014/016

Thermotechnical Principles of the Spray Hardening of Tubes

the absolute value of cooling rate decreases and the range of metal temperature in which the cooling rate is the highest becomes narrower with an increase in the wall thickness. The tests carried out with pipes of 9mm wall thickness and under various water pressures show that an increase in pressure accelerates the cooling, as under higher pressure vapor is removed more quickly from the metal surface facilitating the direct contact with water. The coefficient of the heat exchange α ($\text{cal}/\text{m}^2 \cdot \text{h}^\circ\text{C}$) has been defined by the following formula:

$$\alpha = \frac{3gc_p \ln \frac{t_0 - t_w}{t_f - t_w}}{3\tau - \frac{gcp\delta}{\lambda} \ln \frac{t_0 - t_w}{t_f - t_w}} \quad (1)$$

(Abstactor's note: the subscript f (final) is the translation of subscript k (konechnaya), subscript w (water) that of subscript b (voda).) In equation (1): g = the relation between the weight and the surface of the pipe; c_p = average heat capacity of the metal within the range of cooling temperatures; τ = cooling time; λ = coefficient of heat conductivity; δ = pipe wall thickness; t_0 and t_f = initial and final temperatures of the metal;

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S/133/60/000/007/014/016

Thermotechnical Principles of the Spray Hardening of Tubes

t_w = temperature of the water. The coefficient of heat exchange has been defined by formula (1) when taking the coefficient of solidity into consideration as pipes with walls 3 - 14 mm thick can be classified as "solid bodies", when exposed to rapid cooling. With the aid of α it is possible to calculate the cooling time for pipes with 3 - 14 mm wall thickness by the following formula:

$$\tau = \frac{8c_p}{\alpha\psi} \ln \frac{t_0 - t_w}{t_f - t_w} \quad (2)$$

where ψ = the coefficient of solidity, defined by the following formula: ✓

$$\psi = \frac{1}{1 + Bi/(K_1 + 2)} \quad (3)$$

where K_1 = coefficient of form, Bi - criterion of Biot. When the cooling time is defined it is possible to calculate the optimum relation between the length of the spraying apparatus and that of the hardening surface assuming the water flow to be continuous. A formula expressing this optimum relation is cited. There are 4 graphs, 1 diagram and 2 Soviet references.

ASSOCIATION: Ukrainskiy nauchno-issledovatel'skiy trubnyy institut (Ukrainian Scientific Research Institute for Pipes)

Card 3/3

S/096/62/000/006/005/011
E193/E383

18.1150
AUTHORS: Dolinskaya, L.A., Candidate of Technical Sciences,
Vashchilo, T.P. and Kadinova, A.S., Engineers
TITLE: The effect of heat-treatment conditions on the
structure and properties of steels 12X1M \downarrow (12Kh1MF)
and 15X1M \downarrow (15Kh1MF)

PERIODICAL: Teploenergetika, no. 6, 1962, 20 - 24

TEXT: Cr-Co-V steels, 12Kh1MF and 15Kh1MF, are widely
used in the manufacture of boilers as materials for steam
conduits and manifold tubes. It has been found, however, that
when heat-treatment recommended for these steels (normalizing
and tempering at 750 - 760 °C) is applied to such tubes, a final
product is obtained which lacks homogeneity of its mechanical
properties, the impact strength in particular. Thus, in the
case of thick-walled tubes the impact-strength values greater
than 20 kgm/cm² and lower than 2 kgm/cm² have been observed.
Preliminary study of the manufacturing process revealed that
the cooling rates during the normalisation treatment varied

Card 1/5

The effect of heat-treatment ...

S/096/62/000/006/003/011
E195/E383

within very wide limits. Since this factor could be responsible for the wide variation in the mechanical properties, the investigation described in the present paper was undertaken. The effect of the rate of cooling from the austenitic range on the mechanical properties of the steels studied before and after tempering was investigated in the following manner. Test pieces, 14 x 14 x 60 mm, cut from hot-rolled tubes, were heated to 980 °C, held at this temperature for 30 min and then cooled in the furnace and in air, or quenched in water or oil. The cooling rates obtaining in industrial practice were simulated by cooling in air and reducing the cooling rate by the application of metal jackets. In this way, the following cooling rates were ensured: 2 400 °C/min (water quenching); 800 °C/min (oil quenching); 48 °C/min (air cooling); 8.3 °C/min (air cooling in a thin jacket); 5.7 °C/min (air cooling in a thick jacket); 1 °C/min (furnace cooling). The impact strength of specimens cooled from the austenitic range was determined and their microstructure examined, similar experiments being conducted on specimens normalized and tempered

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S/096/62/000/006/003/011
E193/E383

The effect of heat-treatment

at various temperatures. The effect of various heat-treatment conditions on the ductile-brittle transition temperature was also studied. Several conclusions were reached.

1) As the rate of cooling from the austenitic range is reduced, the impact strength of steel 12Kh1MF after tempering (3 hrs at 750 °C) increases from about 16 kgm/cm² for water-quenched

material to about 22 kgm/cm² for furnace-cooled specimens.

2) The impact strength of steel 15Kh1MF (tempered for 3 hours at 750 °C) decreases with decreasing rate of cooling from the austenitic range, reaching a minimum of about

6 kgm/cm² at the cooling rates of 5.7 - 8.5 °C per min, i.e. at rates which obtain in industry during normalizing of tubes of various sizes.

3) The impact strength of steel 15Kh1MF after normalizing (cooling from the austenitic range at a rate of 4 - 8 °C per min) and tempering is lower than that of steel 12Kh1MF after the same treatment.

4) The impact strength of steel 12Kh1MF after tempering does

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The effect of heat-treatment

S/096/62/000/006/003/011
E193/E583

not change if normalizing is replaced by quenching. On the other hand, the impact strength of steel 15Kh1M1F after quenching and tempering is considerably higher than after normalizing and tempering (14 kgm/cm² in the former and 6 kgm/cm² in the latter case).

5) Some melts of steel 15Kh1M1F show a tendency to temper brittleness, the impact strength of some test pieces tempered at 700 °C being as low as 1 kgm/cm². The critical tempering-temperature range is 500 - 750 °C, the upper limit of this range varying between 650 and 750 °C, depending on the nature of the melt.

6) The wider the critical tempering-temperature range and the steeper the temperature gradient in the tube during heat-treatment, the greater is the risk of embrittlement.

7) The effect of the rate of cooling from the austenitic range on the ductile-to-brittle transition temperature is demonstrated in Fig. 4, where the impact strength of steel 12Kh1MF (graph a)

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The effect of heat-treatment....

S/096/62/000/006/005/011
E193/E385

and 15Kh1M1F (graph 5), tempered for 5 hours at 750 °C, is plotted against the test temperature (°C), various curves relating to specimens which had been cooled from the austenitic range at the following rates: 1) 1 °C/min; 2) 5.7 °C/min; 3) 8.5 °C/min; 4) 48 °C/min; 5) 800 °C/min; 6) 2 400 °C/min. There are 5 figures.

ASSOCIATION: Ukrainskiy nauchno-issledovatel'skiy trubnyy institut (Ukrainian Scientific Research Tube Institute)

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KADINOVA, A.S.

S/133/62/000/001/006/010
A054/A127

AUTHORS: Tayts, N. Yu., Doctor of Technical Sciences, Kolesnik, B. P., Yan-
kovskiy, V. M., Candidates of Technical Sciences, Kadinova, A. S.,
Kaufman, M. M., Engineers

TITLE: High-speed heat-treatment of drilling pipes

PERIODICAL: Stal', ²²no. 1, 1962, 57 - 60

TEXT: The thickness of drilling-pipe walls at the end parts is sometimes twice that of other tube sections. At the UkrNITI (N. K. Polyakova, Engineer) and PNTZ (A. D. Vovsina, Engineer, A. S. Shanina, Engineer, V. I. Kostin, Engineer) tests were carried out to study the high-speed heat treatment of drilling pipes (73 x 9 mm cross section, 6.5 - 7 m long) with upset ends. The pipes were made of 36Г2С (36G2S) steel (C: 0.39%; Mn: 1.71%; Si: 0.55%; S: 0.025%; P: 0.030%) and "45" grade steel (C: 0.49%; Mn: 0.70%; Si: 0.25%; S: 0.041%; P: 0.028%). The heating temperatures (°C-numerator) and the heating rates (°/sec., denomina-
tor) were:

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High-speed heat-treatment of drilling pipes

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	36028	"45"
Hardening	<u>900-920</u> 4.0	<u>900-920</u> 4.0
Annealing	<u>640-680</u> 7.0	<u>550-600</u> 6.5



Mechanical tests revealed that the heat treatment improved the mechanical characteristics of the steel pipes, but the strength and ductility of the upset pipe ends was 10 - 30% lower than in the other pipe sections. To obtain uniform mechanical properties over the entire pipe length special measures have to be taken. To ensure uniform heating of all pipe sections, it is essential to attain the lowest possible temperature drop between the upset end and the remaining pipe. For this purpose two different processes have been established: a) preheating of the upset pipe ends, followed by heating of the whole pipe in a compartment furnace with overheating of the pipe body; b) heating of the pipe in the compartment furnace using a special method of heat distribution. With variant a), 2 removable inductors are mounted on the front stand of the hardening furnace, which

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High-speed heat-treatment of drilling pipes

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heat the pipe ends to about 550 - 600°C, while, subsequently, the entire pipe is heated to 1,300°C in the compartment furnace. With variant b) the pipe body is heated to 1,000°C, the pipe ends to 760°C, at a furnace temperature of 1,400°C. If in the next compartments the furnace temperature is lowered to 900°C, the temperature of the upset pipe ends increases, while that of the pipe body cools down to the given temperature. This variant is to be preferred to the former. To ensure rapid cooling the upset pipe ends should be cooled by a sprayer from both sides. During hardening the pipes have to be rotated under the sprayer at a speed of at least 20 - 30 rpm. After this heat treatment the pipe geometry showed some degree of distortion, particularly ovalness. These effects could be eliminated by straightening at temperatures of 550 - 680°C, when the strength of the pipes is somewhat lowered and their ductility increased. There are 6 figures, 1 table and 5 Soviet-bloc references.



Card 3/3

KADINOVA, A.S.; KHEYFETS, G.N.; TAYTS, N.Yu.

Nature of heat transfer in spray cooling. Inzh.-fiz. zhur. 6
no.4:46-50 Ap '63. (MIRA 16:5)

1. Ukrainskiy nauchno-issledovatel'skiy trubnyy institut,
Dnepropetrovsk.
(Heat-Transmission) (Cooling)

KADINOVA, A.S., inzh.; KHEYFETS, G.N., kand.tekhn.nauk

Comparative evaluation of two types of spray quenching systems for
pipe hardening. Stal' 23 no.7:656-658 J1 '63. (MIRA 16:9)
(Pipe, Steel) (Steel--Quenching)

TAYTS, N. Yu.; KADINOVA, A.S.

Solutions of the differential equation of heat conductivity for a hollow cylinder under boundary conditions of the first and third kinds. Inzh.-fiz. zhur. 7 no.5:88-91 My '64.

(MIRA 17:6)

1. Ukrainskiy nauchno-issledovatel'skiy trubnyy institut, Dnepropetrovsk.

KHEYFETS, G.N., kand. tekhn. nauk; YANKOVSKIY, V.M., kand. tekhn. nauk;
SORKIN, I.I., kand. tekhn. nauk; KADINOVA, A.S., inzh.; FEYGLIN,
V.N., inzh.; TIKHONYUK, A.N., inzh.; SHKURENKO, A.A., inzh.;
KHOMENKO, A.G., inzh.

Steam hardening of high-capacity cylinders. Stal' 25 no.8:849-
852 S '65. (MIRA 18:9)

L 04154-67 ENT(m)/T/EWP(t)/ETI IJP(c) JD
 ACC NR AR6016528 SOURCE CODE: UR/0276/65/000/012/B039/B039

AUTHOR: Kheyfets, G. N.; Yankovskiy, V. M.; Kadinova, A. S.; Shkurenko, A. A.;
Feyglin, V. N.; Tikhonyuk, A. N. 33
DB

TITLE: Determining the basic parameters for cooling of gas cylinders during jet annealing

SOURCE: Ref. zh. Tekhnologiya mashinostroyeniya, Abs. 12B294

REF SOURCE: Sb. Proiz-vo trub. Vyp. 15. M., Metallurgiya, 1965, 72-79

TOPIC TAGS: liquid gas container, annealing, cooling

ABSTRACT: A method is proposed for studying the process of jet annealing of thick-walled gas cylinders to obtain data necessary for designing jet cooling devices. An experimental laboratory installation is designed and manufactured for individual and simultaneous water-cooling of the outer and inner surfaces of a gas cylinder while it is rapidly rotated to equalize cooling along the perimeter. The schematic diagram and technical characteristics of the experimental installation are given. Practical curves are plotted for cooling along the cross section of the cylinder wall, the rate of flow of the coolant is determined and a method is found for cooling the cylinder wall at the required rate. Heat treatment conditions are established for cylinders made of 40Kh steel. The workpiece is heated to the prequenching temperature of 870°C

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ACC NR: AR6016528

in a batch-type furnace, held at this temperature for 40 minutes, cooled in a bilateral (inside and outside) jet cooling device, annealed at a temperature of 500°C and held at this temperature for 2 hours. It is shown that bilateral cooling gives the cylinder practically identical mechanical properties with respect to length and cross section and that these properties satisfy technical specifications. Schematic diagrams are developed for cooling devices to be used in annealing high-capacity gas cylinders. 6 illustrations, 1 table, bibliography of 3 titles. [Translation of abstract]

SUB CODE: 13

Card 2/2 *fl*

KADINOVA, R., u-lka (Burgas)

How I organized and carried out the outdoor lesson "Cotton"
to the 5th grade. Biol i khim 4 no.3:42-44 '62.