

CHEREPANOVA, N.P.

Effect of the conditions of nutrition on the development of
perithecia in ascomycetes. Part.I. Vest. LGU 18 no.21:49-56
'63 (MIRA 16:12)

GOLOVIN, P.N.; CHEREPANOVA, N.P.

Life and scientific work of Artur Arturovich Iachevskii.
Bot. zhur. 48 no.6:918-923 Je '63. (MIRA 17:1)

1. Botanicheskiy institut imeni V.L. Komarova AN SSSR, Lenin-
grad.

PSHEDETSKAYA, L.I.; CHEREPANOVA, N.P.; STEPANOVA, A.M.

Physiological and ecological characteristics of three strains
of *Phytophthora infestans* de Bary. Vest. IGU 19 no.15:49-53
'64. (MIRA 17:11)

BONDARTSEV, A.S.; VLADIMIRSKAYA, M.Ye.; GOLOVIN, P.N.; TROPOVA, A.T.;
KHOKHRYAKOV, M.K.; CHEREPANOVA, N.P.

Work of the mycological section of the All-Union Botanical
Society during the period November 1958-December 1962. Bot.
zhur. 49 no.2s311-318 F '64. (MIRA 17s6)

CHEREPANOVA, N.F.

Fungi found on ticks. Bot. zhur. 49 no. 5:696-699 My 1964.
(MIRA 17:8)

Leningradskiy gosudarstvennyy universitet.

GOLOVIN, P.N.; BONDARTSEV, A.S.; KHOKHRYAKOV, M.K.; DOBROZRKOVA, T.L.; TROPOVA,
A.T.; CHEREPANOVA, N.P.

Activities of the Mycological Section of the All-Union Botanical
Society for the period January 1963-July 1964. Bot.zhur. 49 no.11:
1688-1692 N '64. (MIRA 18:1)

1. Vsesoyuznoye botanicheskoye obshchestvo

ACC NR: AP6005101 (A)

SOURCE CODE: UR/0325/65/000/004/0180/0182

AUTHOR: Pshedetskaya, L. I.; Cherepanova, N. P.; Gorobets, A. M.

29
B

ORG: none

TITLE: Preliminary study of the *Phytophthora infestans* de Bary strain on tomatoes under Leningrad regional conditions

SOURCE: *Nauchnyye doklady vysshey shkoly. Biologicheskii nauki*, no. 4, 1965, 180-182

TOPIC TAGS: horticulture, plant disease, fungus, plant parasite

ABSTRACT: This investigation in 1963 of the resistance of different varieties of tomato plants to *Phytophthora infestans* included a determination of the strains of the fungus collected from the tomatoes at the experimental plots of the Leningrad University Biological Institute. Only strain 4 and possible strain 0 (as determined according to the Shick scale by means of plant differentiators) were isolated

Card 1/2

L 22366-66

ACC NR: AP6005101

from all six varieties of tomatoes. Strains 1 and 1.3 were observed in 2 instances, but in no case were aggressive strains with a 3 or 4 scale rating observed. This was explained by the favorable growing season in 1963. Further studies may expose a greater variety of fungus strains infesting tomatoes. Orig. art. has: 1 table.

SUB CODE: 06/ SUBM DATE: 12Oct64/ ORIG REF: 001/ OTH REF: 003

Card 2/2da

CHEREPANOVA, N.P.; PSHEDETSKAYA, L.I.

Phytophthora infestans DB races in Leningrad Province. Vest.
LGU 20 no.21:57-63 '65. (MIRA 18:12)

CHEREPANOVA, N.P.

Rate of variability of morphological characteristics in the representatives of the genus Chaetomium with dichotomously branched top appendices. Vest.LGU 18 no.3:82-89 '63.

(MIRA 16:2)

(CHAETOMIUM)

BOLYCHEVSKAYA, G.N.; MARTYNOVA, Ye.A.; NOVIKOVA, M.V.; FARBER, A.M.;
CHEREpanOVA, N.S.; DUBOVA, R.Kh.; MASSAROVA, K.A., red.;
DZYUBAK, A.V., tekhn. red.

[National economy of Archangel Province; collection of
statistics] Narodnoe khoziaistvo Arkhangel'skoi oblasti;
statisticheskii sbornik. Vologda, Gosstatizdat, 1962. 158 p.
(MIRA 16:4)

1. Archangel (Province) Oblastnoye statisticheskoye upravle-
niye. 2. Statisticheskoye upravleniye Arkhangel'skoy oblasti
(for all except Dzyubak). 3. Nachal'nik Statisticheskogo
upravleniya Arkhangel'skoy oblasti (for Massarova).
(Archangel Province--Statistics)

ACC NR: AP6032994

SOURCE CODE: UR/0113/66/000/010/0027/0028

AUTHOR: Pomiluyko, N. S. (Candidate of technical sciences); Shoykhet, B. M.;
Cherepanova, R. N.

ORG: NAMI

TITLE: Low-pressure recorder

SOURCE: Avtomobil'naya promyshlennost', no. 10, 1966, 27-28

TOPIC TAGS: pressure measurement, pressure measuring instrument, low pressure gage,
test instrumentation, motor vehicle test

ABSTRACT: A compact low-pressure recorder has been designed for recording on
oscillograph paper the low pressures in an automobile and its components during tests.
The device, which has an electrical connection, can be used for visual observation
when equipped with an indicator gage. The recorder consists of a duralumin case,
corrugated membranes, a flexible cantilever, a cover with an organic glass bottom,
and a connector plug. Wire pickups are glued to the cantilever (resistance 72 ohms,
base - 5 mm, coefficient of strain sensitivity - 2). A cavity formed by the membrane
and a groove in the casing is connected to the capacity where the pressure is to
be measured. Orig. art. has: 2 figures, 1 table, and 1 formula.

SUB CODE: 13, 14/ SUBM DATE: none/ ORIG REF: 002/

Card 1/1

UDC: 531.787.9-8

SUKHORUKOV, K.T.; CHEREPAKOVA, R.V.

Respiration of a plant as affected by certain reactions and its age. Biul.
Glav.bot.sada no.14:34-38 '52. (MLBA 6:5)

1. Glavnyy botanicheskiy sad Akademii Nauk SSSR. (Plants--Respiration)

CHEREPANOVA, R. V.

"Photosynthesis in Potato Plants Depending on the Fertilizers." Cand Biol Sci,
Inst of Plant Physiology imeni K. A. Timiryazev, Acad Sci USSR, Moscow, 1955. (KL, No 15,
Apr 55)

SO: Sum. No. 704, 2 Nov 55 - Survey of Scientific and Technical Dissertations Defended
at USSR Higher Educational Institutions (16).

USHAKOV, B.P.; AVERBAKH, M.S.; SUZDAL'SKAYA, I.P.; TROSHINA, V.P.; ~~CHEREPAKOVA, T.N.~~

Parabiotic nature of physiological electrotonus. Fiziol. zh. SSSR 39
no.2:218-225 Mar-Apr 1953. (CLML 24:3)

1. Laboratory of Histophysiology of the Institute of Physiology imeni A. A. Ukhtomskiy, Leningrad State University imeni A. A. Zhdanov.

Cherepanova, T. N.

✓ Combined action of some agents on tissues of cold-blooded animals. T. N. Cherepanova and I. P. Surdal'skaya, *Vestnik Leningradskogo Universiteta*, 1, Ser. Biol., Geog. i Geol. No. 1, 91-100 (1954).—The action of combined solns. such as NaCl-EtOH, NaCl-HCl, Cl₂-EtOH, NaCl-KCl, CaCl₂-KCl, and CaCl₂-NaCl was studied on frog-leg muscle and of procaine-NaCl on frog sciatic nerve. The use of strong threshold concns. of 2 agents leaves the time of muscle narcotization approx. equal to that found for the more toxic agent alone. Increased effect of action is generally found on combination of weak subthreshold concns. of the agents, while retardation of action is found only in combination of subthreshold concns. of one agent with high concns. of the other agent. G. M. Kosolapoff.

CHEREPANOVA, T.N.

USHAKOV, B.P.; ~~CHEREPANOVA, T.N.~~

Effect of a thermal excitant on the somatic muscles of the leach
Haemopsis sanguisuga. Uch.zap.Len.un. no.164:308-327 '54.

(MIRA 10:3)

(MUSCLE) (~~TEMPERATURE--PHYSIOLOGICAL EFFECT~~) (LEECHES)

LYSENKO, N.N.; CHEREPANOVA, V.N.

Water-soluble mercaptides of heavy metals. S-cobalt- and
S-iron-dimercaptoalkane sodium sulfonates. Ukr. khim. zhur.
30 no.10:1091-1093 '64. (MIRA 17:11)

1. Ukrainskiy nauchno-issledovatel'skiy sanitarno-khimicheskiy
institut.

MORACHEVSKIY, A.G.; CHEREpanova, Ye.A.; ALABYSHEV, A.F.

Sodium diffusion in liquid lead. Izv. vys. ucheb. zav.;
tsvet. met. 3 no.3:70-73 '60. (MIRA 14:3)

L. Leningradskiy politekhnicheskii institut, Kafedra obshchey
khimii.
(Sodium) (Diffusion) (Lead alloys)

CHEREPANOVA, Ye.M.

Treatment of acute suppurative otitis media complicated by mastoiditis with subperiosteal injections of novocaine-penicillin. Zhur. ush., nos. 1 gonā. bol. 20 no.5:11-14 S-0 '60. (MIRA 14:6)

1. Iz kliniki bolezney ukha, gorla i nosa (zav. - prof. T.Ya. Abramov) Voronezhskogo meditsinskogo instituta. (NOVOCAINE)
(EAR--DISEASES) (PENICILLIN)

CHEREPANOVA, Ye.M.

Therapy with a novocaine-penicillin block in acute mastoiditis
with subperiosteal abscess. Vest. otorin. 22 no.5:62-68 S-0 '60.
(MIRA 13:11)

1. Iz kliniki bolezney ukha, gorla i nosa (zav. - prof. T.Ya.
Abramov) Voronezhskogo meditsinskogo instituta.
(MASTOID PROCESS---DISEASES) (LOCAL ANESTHESIA)
(PENICILLIN)

CHEREPANOVA, Ye.P., YEMEL'YANENKO, N. I., NESTERKO, A.D.

Ampalykskoye iron ore deposit. Sov. geol. 3 no.7:122-123 J1
'60. (MIRA 13:8)

1. Ampalykskaya geologorazvedochnaya partiya.
(Kuznetsk Basin--Iron ores)

CHEREPANOVA, Yu.M.

Paroxysmal hemoglobinuria. Vop. okhr. mat. i det. 6 no.6:
79-81 Je '61. (MIRA 15:7)

1. Iz kafedry detskikh bolezney Severo-Osetinskogo meditsinskogo
instituta (ispolnyayushchiy otyazannosti sveduyushchego -
kand. med. nauk Ye. F. Chamokova).
(HEMOGLOBINURIA)

~~CHERPANTSEV, G., inzh.; GIL'MAN, Ya., inzh.~~

Demonstration building of a dormitory. Stroitel' no.4:3-4 Ap '58.
(MIRA 11:5)

(Rostov-on-Don--Student housing)

CHEREPANYA, N. (Khar'kov)

Antiskid automobile-tire sleeves. Pozh.delo 4 no.11:20 N '58.
(MIRA 11:12)

(Automobiles--Safety measures)

CHEREPASHCHUK, A.; YEMEL'YANENKO, M.T., nauchnyy rukovoditel'

Photometric observations of the total lunar eclipse on May 13-14,
1957. Uch.zap.Kuib.gos.ped.inst. no.37:10-16 '62.

(MIRA 16:1)

(Eclipses, Lunar)

CHERPASHENITS, M.R., kandidat meditsinskikh nauk

Repeated stomach resection in recurrent cancer. Vest.khir. 75 no.4:
128-129 My '55. (MLRA 8:8)

1. Iz kafedry fakul'tetskoy khirurgii (nach.-prof. A.V.Mel'nikov)
VMA na baze dorozhnoy bol'nitsy Oktiabr'skoy zhel. dor. Leningrad,
fontanka, 106, VMA, kafedra fakul'tetskoy khirurgii.

(STOMACH, neoplasms,
recur., repeated surg., resection)

CHEREPASHENETS, M.R.

[Enterogenic phlegmons of the intestines] Enterogennye flegmony
kishok. Moskva, Medgiz, 1956. 108 p. (MIRA 9:10)
(INTESTINES--DISEASES)

GRIBKOV, Valentin Aleksaysvich; GRIGOR'YEV, Pavel Vesil'yevich; SARIN,
Valeriy Ivanovich; SLIVIN, Grigoriy Andreyevich; CHERKASHENETS,
R.G., inzh., red.; BOBROVA, Ye.N., tekhn.red.

[Narrow-gage TU2 diesel locomotive] Uzkokoleinyi teplovoz TU2.
Moskva, Gos. transp. zhel-dor. izd-vo, 1958. 222 p. (MIRA 12:1)
(Locomotives)

MEREZHKO, Vasilii Grigor'yevich, inzh.; CHEREPASHENETS, R.G., inzh.,
red.; KHITROV, P.A., tekhn.red,

[Expansion of the network of locomotive roundhouses] Razvitie
lokomotivnykh depo. Moskva, Gos.transp.zhel-dor.izd-vo, 1959.
169 p. (MIRA 13:1)
(Railroads--Repair shops)

MAMCHENKO, V.P., inzh.; RYAZANTSEVA, Yu.A., inzh.; DROZDOV, E.A., kand. tekhn. nauk, retsenzent; AYZINBUD, S.Ya., kand. tekhn. nauk, retsenzent; POLULEKH, V.K., inzh., retsenzent; STOLYARCHUK, I.V., kand. tekhn. nauk; GOROKHOVIKOV, L.M., kand. tekhn. nauk; SAZONOV, A.G., inzh., red.; CHEREPASHENETS, R.G., inzh., red.; USENKO, L.A., tekhn. red.

[Operation of locomotives] Eksploatatsiia lokomotivov. Moskva, Transzheldorizdat, 1963. 415 p. (MIRA 16:12)
(Locomotives) (Railroads--Management)

GORCHAKOV, Ye.V., kand.tekhn.nauk; MAKSIMOV, N.V., kand.tekhn.nauk;
CHERPASHENETS, R.G.

Reducing electric power consumption for train traction.
Zhel.dor.transp. 46 no.12:31-34 D '64. (MIRA 1961)

1. Glavnyy inzhener lokomotivnoy sluzhby Moskovskoy zheleznoy
dorogi (for Cherepashenets).

CHEREPAŠHKOVA.

SUBJECT: USSR/Schooling (Machinist) . 27-8-7/32

AUTHOR: Cherepashkov, A., Vice-Director of Trade School No 1 at Kuybyshev

TITLE: The Output of Complex Machinery is the Basis of Success
(Vypusk slozhnoy produktsii - osnova uspekhov)

PERIODICAL: Professional'no - Tekhnicheskoye Obrazovaniye, Aug 1957, #8, pp 11-14 (USSR)

ABSTRACT: Kuybyshev Trade School No 1 trains workmen in 12 professions. The training is mainly in complex production, in which 65 % of the students participate. One of the items produced by the school is machine tool 1615M which consists of 943 parts.

A description of training and work methods applied as well as the method of teaching the students discipline, seriousness and a responsibility for the work performed follows.

The article contains 2 photos and a diagram.

INSTITUTION: -
PRESENTED BY: -
SUBMITTED: -
AVAILABLE: At the Library of Congress
Card 1/1

~~CHEREPENIN, D.I., inzh.~~

Construction of the foundation of a two-story building under
certain geological conditions. 'Transp.stroi. 12 no.7:40 J1 '62.

(MIRA 16:2)

(Kazan--Foundations)

L 01062-67 EWP(d)/EWP(1) IJP(c)

ACC NR: AP6015574

(N)

SOURCE CODE: UR/0146/66/009/002/0048/0051

AUTHOR: Cherepenin, I. D.

ORG: Leningrad Electrotechnical Institute im. V. I. Lenin (Leningradskiy elektrotekhnicheskiy institut)

53
B

TITLE: Allowance for level quantization in simulating digital servosystems^a

SOURCE: IVUZ. Priborostroyeniye, v. 9, no. 2, 1966, 48-51

TOPIC TAGS: servosystem, analog computer, electronic simulation

ABSTRACT: A method of simulating the stepped characteristic of a level quantizer, which is an essential element of digital servosystems, is considered. The quantization is substantially nonlinear. The stepped characteristic is realized by means of an NB-5 nonlinear unit which breaks down the input into 2-v or 1-v steps (up to 100); the unit is based on a reversible step-by-step switch. Transition from real variables to machine variables (operational-amplifier voltages) involves scale factors; a technique for calculating the latter (suitable for Soviet-made equipment) is suggested. Orig. art. has: 2 figures.

SUB CODE: 09 / SUBM DATE: 09Nov64 / ORIG REF: 001

Card 1/1 vlr

UDC: 62-503 53

8 (5)

SOV/112-57-5-10233

Translation from: Referativnyy zhurnal. Elektrotehnika, 1957, Nr 5, p 94 (USSR)

AUTHOR: Cherepenin, L. A.

TITLE: Experience With a Mechanized Aluminum Casting for Squirrel-Cage Rotors of Standard Size #9 Electric Motors (Opyt mekhanizatsii zalivki alyuminiyen korotkozamknutykh rotorov elektrodvigateley yedinoi serii 9-go gabarita)

PERIODICAL: Inform.-tekhn. sb. M-vo elektrotekhn. prom-sti SSSR, 1955, Nr 82, pp 3-7

ABSTRACT: A rotor assembly line for size #9 electric motors, at M. I. Kalinin Plant, is described. The line is part of the general production flow, but has an entirely autonomous closed processing cycle. The rotor assembly time is 12 min. The floor area of the line is 50 m². The equipment is so placed that production-line processing is secured. Core stacking is made on a rotating table with 8 sockets for stacking mandrels. There are three hydro-presses.

Card 1/2

SOV/112-57-5-10233

Experience With a Mechanized Aluminum Casting for Squirrel-Cage Rotors of
Of them, two 100-ton presses serve for pressing the rotor and releasing the
stacking mandrel; the third 350-ton press is used for casting the aluminum-
silicon-copper alloy into rotors. Hoisting and transportation equipment and
other special devices are provided.

I.A.R.

Card 2/2

CHEREPENIN, L.A., inzhener; KUSTOVSKIY, B.B., inzhener.

Quality of coke. Lit. proizv. no.2:29 F '57.
(Coke)

(MLRA 10:4)

DECLASSIFIED - 1965

CHEREPENIN, Petr Georgiyevich; KOFMAN, K.D., red.; VORONIN, K.P.,
tekhn.red.

[Installation of asynchronous motors] Montazh asinkhronnykh
elektrovdigatelei. Moskva, Gos.energ.izd-vo, 1959. 45 p.
(Biblioteka elektromonters, no.7) (MIRA 13:1)
(Electric motors, Induction)

CHEREPENIN, Petr Georgiyevich[deceased]; KOFMAN, K.D., red.

[Installation of asynchronous motors with a power rating
up to 100 kw.] Montazh asinkhronnykh dvigatelei do 100 kv.
Izd.2. Moskva, Energiia, 1964. 55 p. (Biblioteka elektro-
montera, no.145) (MIRA 17:12)

SHEKHTER, Yu.N.; YEVSTRATOVA, N.I.; CHEREPENINA, V.N.

Addition of corrosion inhibitors to sour fuels. Khim. i tekhn.
topl. i masel 9 no.12:47-51 D '64. (MIRA 18:2)

1. Moskovskiy zavod "Neftega:".

ORLOV, N.K., (Kiyev); CHEREPENKO, A.Ye., (Kiyev)

On the possibility of eliminating circular hauls on the road.
Zhel. dor. transp. 38 no.8:45-48 Ag '56. (MLRA 9:10)

1. Zamestitel' nachal'nika Yugo-Zapadnoy dorogi (for Orlov)
2. Nachal'nik sektora finansovogo otdela (for Cherepenko).
(Railroads--Management)

CHEREPENKO, A.Ye., inzhener.

Unused resources in lowering the cost of passenger transportation.
Zel.dor.transp. 39 no.4:27-31 Ap '57. (MLRA 10:5)
(Railroads--Cost of operation)

CHEREPENKO, A.Ye.
ORLOV, N.K., inzh.; ~~CHEREPENKO, A.Ye., inzh.~~

Opportunities for reducing car rerouting on the Southwestern railroad.
Zhel. dor. transp. 40 no.3:36-39 Mr '58. (MIRA 11:4)
(Russia, Southern--Railroads--Traffic)

2WA-50

L 05132-67 EWT(1) JK

0483 0190

ACC NR: AP6032092

SOURCE CODE: UR/0438/66/028/005/0049/0054

AUTHOR: Fedyuk, E. O. -- Fedyuk, Ye. A. ; Reznik, S. R. ; Cherepenko, O. Y. -- Cherepenko, Ye. I. ; Nosach, L. M. -- Nosach, L. N.

19
B

ORG: Institute of Microbiology and Virology AN URSR (Institut mikrobiolohiyi i virusolohiyi AN URSR)

TITLE: Effect of deoxyribonuclease on rabies virus

SOURCE: Mikrobiolohichnyy zhurnal, v. 28, no. 5, 1966, 49-54

TOPIC TAGS: virus, virus disease, rabies virus, deoxyribonuclease

ABSTRACT: The effect of deoxyribonuclease on fixed rabies virus was studied. A mixture of the enzyme with the virus was injected into the brain of albino mice weighing 8 to 10 g. Deoxyribonuclease greatly reduces the infectious titre of the virus, its inactivating effect being directly proportional to its concentration. Intra-cerebral administration of DNAse solutions to mice somewhat reduces the percentage of lethality. Orig. art. has: 4 tables. [Based on authors' abstract] [KS]

[W.A.50]

SUB CODE: 06/ SUBM DATE: 05Aug65/ ORIG REF: 008/ OTH REF: 007/

Card 1/1

6(4)

06247

SOV/107-59-6-11/50

AUTHOR: Cherepenko, N., Deputy Secretary

TITLE: Our Patronage of a School

PERIODICAL: Radio, 1959, Nr 6, p 7 (USSR)

ABSTRACT: The employees of the Blagoveshchenskiy gorodskoy radiouzel (Blagoveshchensk City Wired Radio Center) furnish assistance to radio amateurs of High School Nr 6 imeni Lenina. They hold lectures, organize workshops and supply radio parts and equipment. Radio technician Viktor Syachinov of the wired radio center is the leader of the amateur group at the school.

ASSOCIATION: Partorganizatsiya Amurskogo upravleniya svyazi (Party Organization of the Amur Communication Directorate)

Card 1/1

LOBOV, V.P.; YAGUPOL'SKIY, I.M.; CHEREPENKO, I.I., FIALKOV YE.A.

Fungicidal properties of the substitutes of tetrachloride and
benzilidene chloride. Prikl. biokhiz. i mikrobiol. 1 no.3:355-357
My-Je '65. (MIRA 18:7)

1. Institut organicheskoy khimii AN UkrSSR.

IOBOV, V.P.; STOKAN', V.V.; CHEREPENKO, V.A.; CHEREKASOV, V.N.

Fungicidal properties of some pyrimidine nucleosides. Dokl.
biokhim. i mikrobiol. 1 no.2:218-219 Moscov 1955. (MIRA 18:33)

I. Institut organicheskoy khimii AN URSR, Rlyon.

ZVA-50

L 05132-67 EWT(1) JK

0403 0170

3

ACC NR: AP6032092

SOURCE CODE: UR/0438/66/028/005/0049/0054

AUTHOR: Fedyuk, E. O. -- Fedyuk, Ye. A. ; Reznik, S. R. ; Cherepenko, O. Y. -- Cherepenko, Ye. I. ; Nosach, L. M. -- Nosach, L. N.

19
B

ORG: Institute of Microbiology and Virology AN URSR (Institut mikrobiolohiyi i virusolohiyi AN URSR)

TITLE: Effect of deoxyribonuclease on rabies virus

SOURCE: Mikrobiolohichnyy zhurnal, v. 28, no. 5, 1966, 49-54

TOPIC TAGS: virus, virus disease, rabies virus, deoxyribonuclease

ABSTRACT: The effect of deoxyribonuclease on fixed rabies virus was studied. A mixture of the enzyme with the virus was injected into the brain of albino mice weighing 8 to 10 g. Deoxyribonuclease greatly reduces the infectious titre of the virus, its inactivating effect being directly proportional to its concentration. Intra-cerebral administration of DNAse solutions to mice somewhat reduces the percentage of lethality. Orig. art. has: 4 tables. [Based on authors' abstract] [KS]

[w.a. 50]

SUB CODE: 06/ SUBM DATE: 05Aug65/ ORIG REF: 008/ OTH REF: 007/

Card 1/1

GARKUNOV, V.P.; CHEREPENNIKOV, A.A., prof., red.; LEBEDEVA, I.,
red.

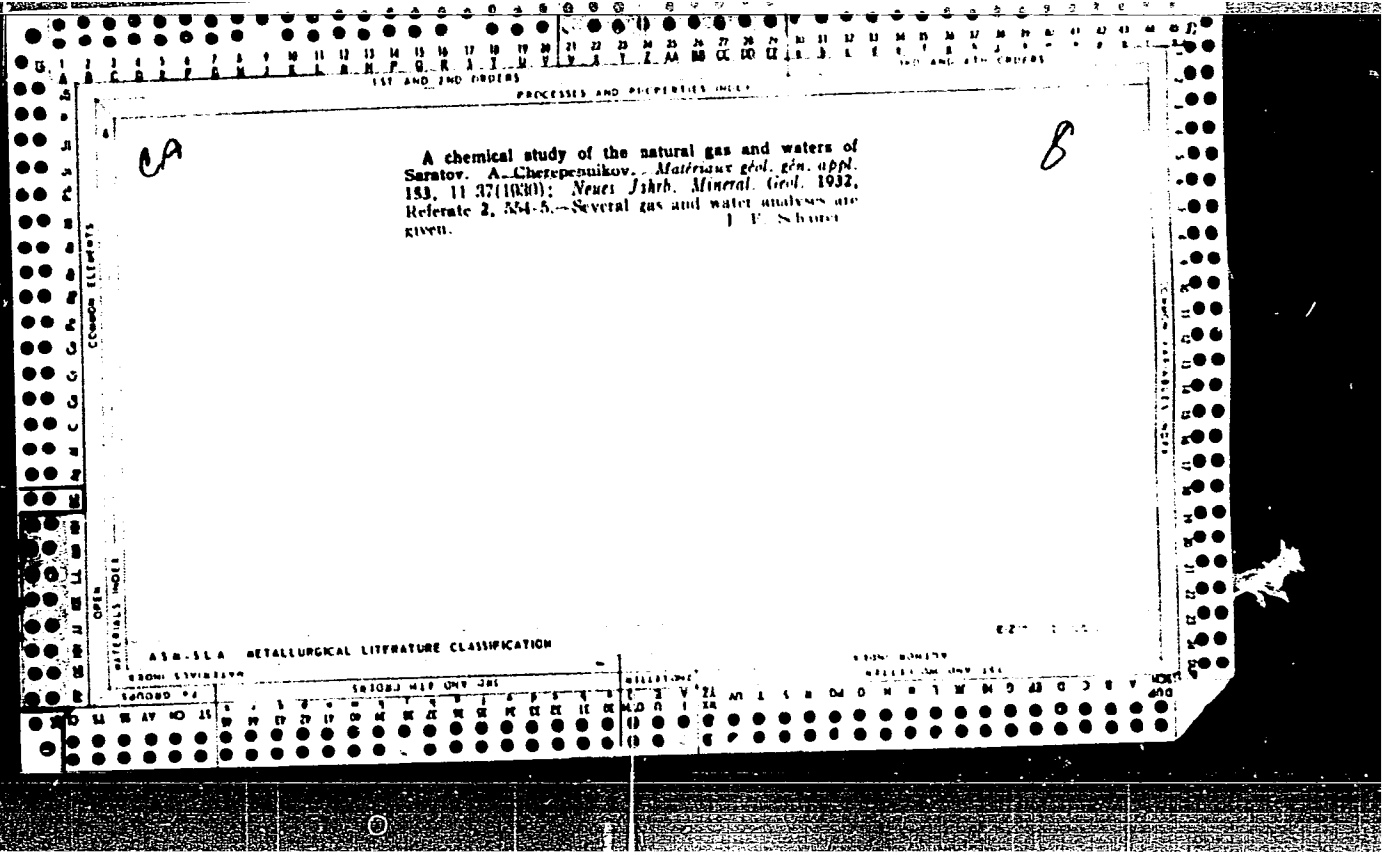
[Chemistry; a textbook for students entering the Leningrad
Institute of Engineering and Construction] Khimija; ucheb-
noe posobie dlia postupaiushchikh v LISI. Leningrad, Leningr.
inzhenerno-stroit. in-t, 1964. 103 p. (MIRA 18:3)

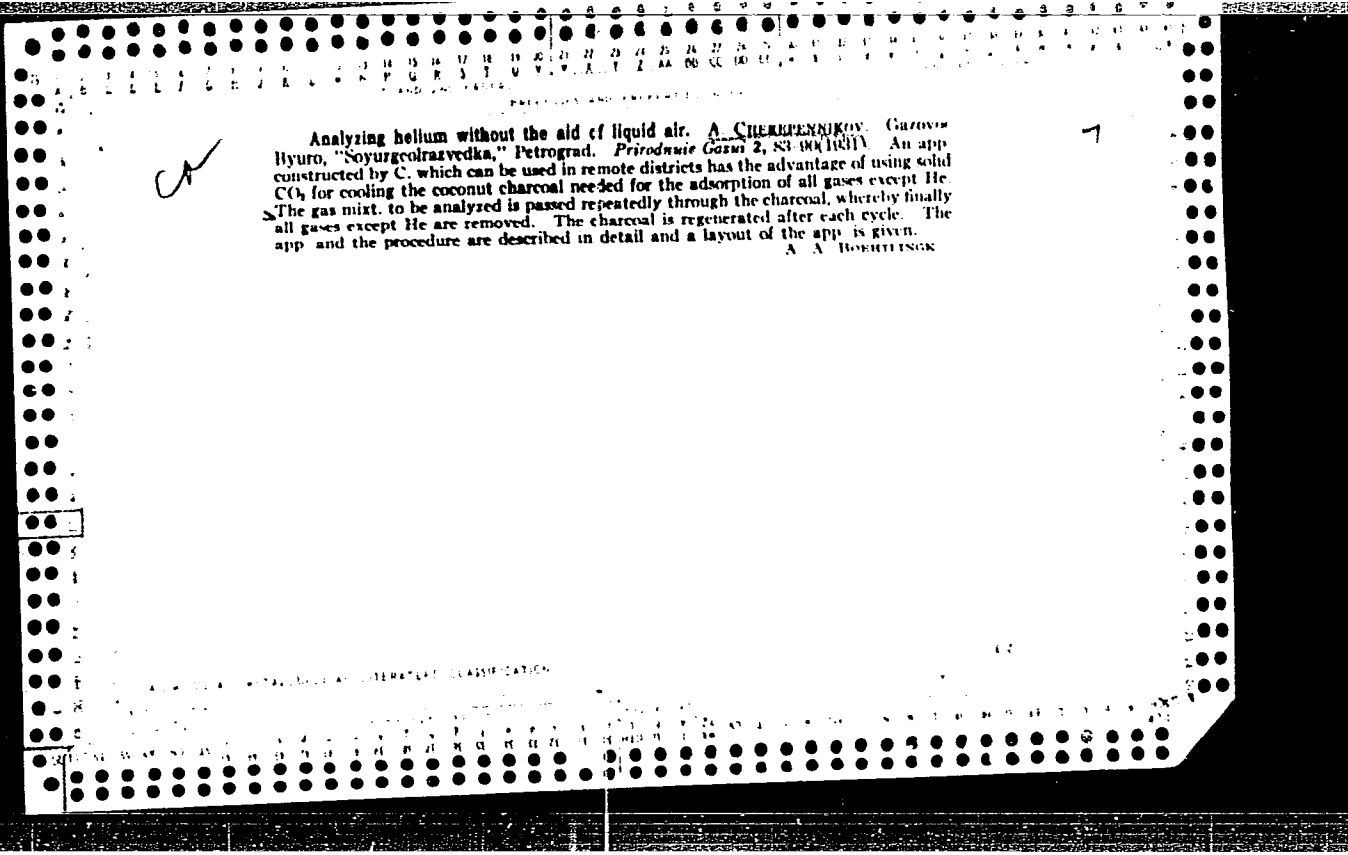
ca

21

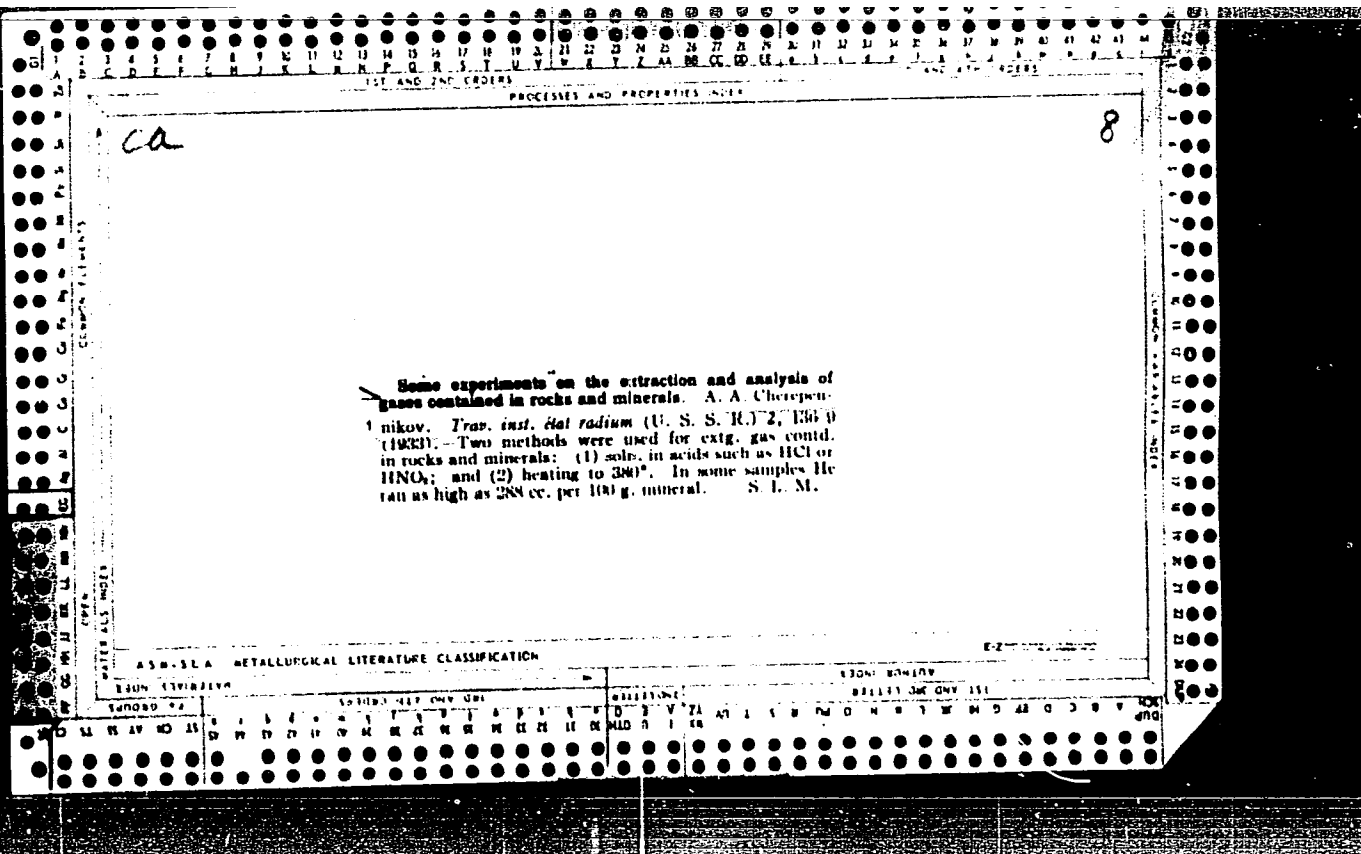
Chemical application for methane from natural gas. A. A. CHERKVENNIKOV.
Neftevaiz. Khorovatsko 10, 700 0(1120) - A review of the literature comprising chlori-
nation, oxidation, water gas reaction, reaction with CO and CO₂, decoupling into C and
H₂, prepn of higher hydrocarbons, prepn of cathodes and prepn of HCN. A. A. B.

ASB-55A METALLURGICAL LITERATURE CLASSIFICATION





Analizing helium without the aid of liquid air. A. CHEREPENNIKOV. *Gazovye*
Hyuro, "Soyuzgcolrazvedka," Petrograd. *Prirodnue Gazni* 2, 83-84 (1931). An app
constructed by C. which can be used in remote districts has the advantage of using solid
CO₂ for cooling the coconut charcoal needed for the adsorption of all gases except He.
The gas mixt. to be analyzed is passed repeatedly through the charcoal, whereby finally
all gases except He are removed. The charcoal is regenerated after each cycle. The
app and the procedure are described in detail and a layout of the app is given.
A. A. BOBILINSKI



ca

7

Determination of argon and helium by adsorption with
 carbon at the temperature of solid carbon dioxide. ^{A A}
 Cherepanikov. ^{A A} *Natural Gates U. S. S. R. No. 7, 1946*
 (1945).—Helium plus A is detd. by adsorption with metal
 lic Ca; He is then detd. by adsorption with C at the temp
 of solid CO₂, and the amt. of A by difference. ^{A. A. P.}

AS & SLA METALLURGICAL LITERATURE CLASSIFICATION

PROCESSES AND PROPERTIES INDEX

2

ca

The composition of the air in the stratosphere. A. A. Cherenikov. *Natural Gases U. S. S. R.* No. 8, 45 (1954).—The air was sampled by means of glass vessels (1120 cc.) sealed under a high vacuum. The analysis was made by the Mourau and Lapape method (C. A. 16, 2101), and by the Moskin method (*Tekhnicheskaya Fizika* 1, 488(1931)). The pressure within the vessel was 47.5 ± 2 mm. Hg at 55°. The air contained O 20.95, N₂ 78.13, A + Kr + Xe 0.92, He + Ne 0.0017% by vol.; H₂ and H₂O were not detected. A. A. P.

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

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1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

2ND AND 4TH ORDERS

COMMON ELEMENTS

ESSENTIAL NOTES

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CA

Hydrogen in natural gas and especially in effusive rocks in the Irlikin gorge in the southern Ural. A. A. Cherepennikov. *Akad. V. I. Vernadskomu k Pyatidessyatiyu Nauch. Deputatsii* 1, 325-33 (1935); *Chem. Zentr.* 1936, 1, 1711.— Rechecking of the analyses of Melitopol and Melnikov natural gas indicated the presence of H in these gases. Analysis of the gases of the Soolikamsk lime deposits gave H contents of 5.3-18.5% in addn. to a great deal of N and CH₄. It is of interest that the natural gas from the deposits of dunite massive rocks at Nishnetagisk contains about 80% H₂, 10% N₂, and 10% CH₄. In the gases of the petroleum region H₂ was found in 2 samples; one from Grosny, analyzed in 1883, was reported to contain 8.3% H₂, and another from Uzbekistan, analyzed in 1935, was reported to contain 12.7%. These data, however, are so improbable that a rechecking is required. H₂ was recently (1935) found in 2 wells in the Irlikin gorge, the concns. being 80.4 and 4.6%. Cases of the detection of H₂ at shallow depths in effusive rocks should be more accurately investigated to make certain whether or not the evolution of H₂ is due to corrosion of the well casing by acid ground water. The assumption of Vernadskii (cf. C. A. 25, 2359) concerning the decompn. of water by radioactive materials is discussed. M. G. Moore

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

ESSENTIAL NOTES

COMMON ELEMENTS

ESSENTIAL NOTES

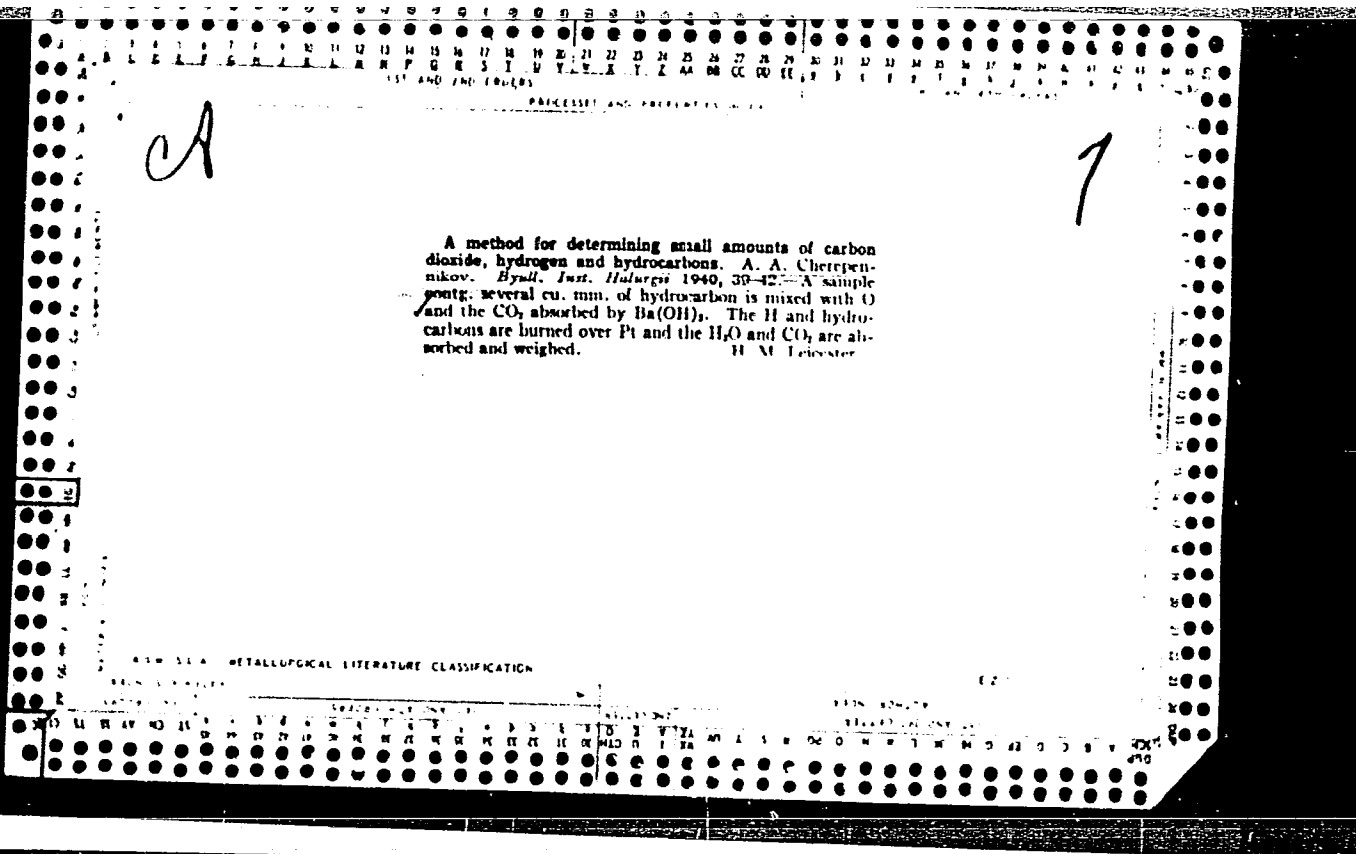
COMMON ELEMENTS

ca

21

Hydrogen sulfide, carbon dioxide and sulfur contents
of natural gas from the Basmoff oil wells. A. A. Chere-
povskiy. *Vysokoe Kachestvo* 1937, No. 2, 38 p.
128 was detd. by the reaction of the gas with a titrated
soln. of I. The total S was detd. by absorption in a soln
of K_2CO_3 , oxidation to sulfate by H_2O_2 and pptn. as
 $BaSO_4$. CO_2 was detd. in the Martin-Green app. (C. I.
27, 2111) by absorption with a titrated soln. of $Ba(OH)_2$.
The procedure is described. A. A. Bozhing

ASAC-51 A METALLURGICAL LITERATURE CLASSIFICATION



CHEREPENNIKOV, A.A.

[Guide to the testing and analysis of natural gases] Rukovodstvo
po opobovaniiu i analizu prirodnykh gazov. Moskva, Gos. izd-vo
geol. lit-ry, 1951. 119 p. (MLRA 7:4)

(Gas, Natural)

DEMENT'YEVA, M.I.; CHEREPENNIKOV, A.A., redaktor; PERMINOV, S.V., vedushchiy redaktor; SOKOLOVA, Ye.V., tekhnicheskiy redaktor

[Analysis of hydrocarbon gases] Analiz uglevodorodnykh gazov. 2-e. ispr. i dop. izd. Leningrad, Gos. nauchno-tekhn. izd-vo neftianoi i gorno-toplivnoi lit-ry, 1953. 244 p. [Microfilm] (MLRA 7:10)
(Gases--Analysis)

CHEREPENNIKOV, A. A.

"Materials for the Geochemical Study of Natural Gases in Petroleum Deposits Located in the Kuybyshev Area and in the Tatar Autonomous Republic," page 199 of the book "Formation of Petroleum in the Volga-Urals Area," a compilation of works of the All-Union Sci.Res. Geological Prospecting Inst. (VNIGRI), Issue 82, published by Gostoptekhizdat, 1955

TABCON and summary D 332548, 20 Oct 55

CHEREPENNIKOV, A.A.

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Geochemical study of the natural gases in some oil sites in the Khatynskiy region and in the Talai Autonomous S.S.R. A. A. Cherepennikov. *Trudy Vostochno-Sibirskogo Nauchno-Issledovatel'skogo Geol. Razvedoch. Inst.* 82, 109-130 (1955); *Referat. Zhur., Khim.* 1955; Abstr. No. 54020. --Free natural gases (NG) are not found except in the single-phase liquid system. H_2S , CO_2 , C_1 , CH_4 , N_2 , A (with Kr and Xe), and He (and Ne) are detd. The av. compn. of gases (% by vol.) in Devonian deposits is: H_2S 0, CO_2 0.05-3.5, C_1 27.3-39.9, C_2H_6 and higher homologs 47-61.1, N_2 and rare gases 11.1-16; A + Kr + Xe 0.022-0.041; He + Ne 0.041-0.063. In Carboniferous deposits the compn. is: H_2S 1.0-2.0, CO_2 0.5-3.2, C_1H_4 27.2-48.7, C_2H_6 and higher 32.0-48.0, N_2 and rare gases 0.9-21.5, A + Kr + Xe 0.009-0.022, and He + Ne 0.007-0.071. The comparative gas characteristics of 4 Devonian and 3 Carboniferous oil sites are given. Within a single site the NG are similar. The total tension of the NG is equal to that of the satn. pressure. The predominant quantity of N_2 in the NG does not contain A, and N_2 from the air is not a spin. The abs. age of NG (therefore of the oil and water) is detd. by the He content and indicates the age of the surrounding rock. From the gas compn. it can be concluded that the Devonian oils have not been subjected to oxidizing processes, which processes have affected the gas compn. of the Carboniferous and those from the carbonate depositions over the Devonian strata. It is considered necessary to continue the geochem. study of NG for clarifying the origin of the gases and their role in the origin and formation of oil deposits.

N. Vasiloff

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11

CHEREPENNIKOV, A.A.; YEGOROVA, A.Ye.

Carbonization of lime-sand products made of dolomitic lime.
Nauch.dokl.vys.shkoly; stroi. no.2:205-208 '59.
(MIRA 13:4)

1. Rekomendovana kafedroy khimii Leningradskogo inzhenerno-
stroitel'nogo instituta.
(Carbonization) (Lime)

SUKHOVEYEV, R.G.; CHEREPENNIKOV, A.I.; EL'KOV, F., red.

[Prestressed concrete elements for roofing of industrial elements] Predvaritel'no napriazhennye zhelezobetonnye konstruktsii pokrytii promyshlennykh zdanii. Barnaul, Altaiskoe knizhnoe izd-vo, 1962. 90 p. (MIRA 17:7)

~~CHEREPENNIKOV, I.A., inzhener; RUMYANTSEV, P.P., mekhanik.~~

Use of cation filters without strainer heads. Energetik 4 no.1:24-25
Ja '56. (Feed-water purification) (MIRA 9:4)

SOV/91-58-3-12/2B

AUTHOR: Cherepennikov, I.A., Engineer

TITLE: A Coverless Drainage Installation of an N-Cationite Filter
(Beskolpachkovoye drenazhnoye ustroystvo N-kationitovogo
fil'tra) Exchange of Experience (Obmen opytom)

PERIODICAL: Energetik, 1958, Nr 3, pp 16-18 (USSR)

ABSTRACT: The author describes and illustrates a coverless drainage installation of a cationite filter as constructed at a thermal electric power plant. He gives the characteristics of the new installation and says that the new system differs little from another similar system described by himself and the Mechanic P.P. Rumyantsev in "Energetik", 1956, Nr 1. The ceramic filter stove Nr 40 produced by the ceramic plant of Kineshma was used. The cationite capacity of the new installation is 7 tons, the filter's diameter is 2,000 mm. The author praises the new system as better and more economical. There are 2 diagrams and 1 Soviet reference.

Card 1/1

CHEREPENNIKOV, I.A., inzh.

Semiempirical method for determining the minimum output of boilers.
Teploenergetika 6 no.1:88-90 Ja '59. (MIRA 12:1)
(Boilers)

L 22050-66 ENT(1)/ENT(m)/EPF(n)-2/ENP(j)/ETC(m)-6 WW/JM/GG/WE/RM

ACC NR: AP6003592 SOURCE CODE: UR/0170/06/010/001/0131/0134

44
43
B

AUTHOR: Cherepannikov, I. A.

ORG: Branch of the Moscow Institute of Chemical Machinery Construction, Tambov
(Filial Moskovskogo instituta khimicheskogo mashinostroyeniya)

TITLE: Determination of the thermal properties of dropping liquids

SOURCE: Inzhenerno-fizicheskiy zhurnal, v. 10, no. 1, 1966, 131-134

TOPIC TAGS: thermal property, liquid, coolant, similarity theory

ABSTRACT: In the calculation of heat insulation assemblies it is necessary to know the physical constants of the coolants. In spite of the extensive reference materials available in the literature, data on the properties of many liquids are either absent altogether or partially incomplete. The present author proposes a method of determining the thermal properties of liquids on the basis of employing the similarity theory and an analysis of the dimensionality in a more general form than heretofore available. The following equation is used for thermodynamically similar materials.

$$K_1 = f(K_2, K_3, \dots, K_7)$$

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where $K_1, K_2, K_3, \dots, K_7$ are dimensionless relative variables, i. e., similarity criteria. In constructing the criteria, the author uses the initial variables which more fully represent the individual properties of the materials. The following 7 criteria are obtained to form relationships of the basic thermal characteristics of liquids:

$$K_1 = \sigma^2 / \mu \lambda T; K_2 = \sigma^2 / \rho v \mu^2; K_3 = c_p \mu / \lambda = Pr; K_4 = \mu^2 r / \sigma^2;$$

$$K_5 = N \mu^2 \sigma / M \rho^2; K_6 = \alpha \sigma^2 / \mu \lambda; K_7 = \sigma / \rho l.$$

On the basis of similarity theory, the results of one experiment are extended to many similar systems. In this case, they are thermodynamically similar materials. The applicability of the method is analyzed on the example of the thermal quantities of liquid hydrocarbons. ¹³⁻⁵⁰ Orig. art. has: 1 table and 5 formulas.

SUB CODE: 20 / SUBM DATE: 09Mar65 / ORIG REF: 002 / OTH REF: 001

Card 2/2

MGS

137-58-4-8165D

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 4, p 258 (USSR)

AUTHOR: Cherepin, V. T.

TITLE: An Investigation of Phase Transformations in Steels and Carbon-free Iron Alloys at High Rates of Heating and Cooling (Issledovaniye fazovykh prevrashcheniy v stalyakh i bezuglerodistykh splavakh zheleza pri vysokikh skorostyakh nagreva i okhlazhdeniya)

ABSTRACT: Bibliographic entry on the author's dissertation for the degree of Candidate of Technical Sciences, presented to the Kiyevsk. politekhn. in-t (Kiyev Polytechnic Institute), Kiyev, 1957

ASSOCIATION: Kiyevsk. politekhn. in-t (Kiyev Polytechnic Institute), Kiyev

1. Metals--Phase transitions--Bibliography 2. Steel--Phase transitions--Thermal effects 3. Iron alloys--Phase transitions--Thermal effects

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CHERENKO, N. F.

AUTHORS: Gridnev, V.N. Dr. of Tech. Sc., Prof., Cherepin, V.T.,
Ing. and Chernenko, N.F., Ing. (Inst. of Metal Physics,
Ac.Sc. Ukraine and Kiev Polytechnical Institute).

TITLE: Hardening of the austenite in the case of martensitic
transformation. (Uprochneniye austenita pri obratnom
martensitnom prevrashchenii).

PERIODICAL: "Metallovedenie i Obrabotka Metallov" (Metallurgy and
Metal Treatment), 1957, No.5, pp.7-12 (U.S.S.R.)

ABSTRACT: This paper is devoted to the study of the influence of
the austenite to martensite and martensite to austenite
(direct and reverse) transformations on the mechanical
properties of austenite and the study of the influence
of the heating speed on the kinetics of transformation
and stabilisation of the austenite. The investigations
were carried out on an iron-nickel-manganese alloy
containing 21.5% Ni, 2.86% Mn and 0.02% C; the
martensitic point is about 10°C and the initial
temperature of the reverse martensitic transformation
is 470°C. The alloy was produced in a high frequency
furnace, forged into a cylinder of 8 mm dia. and drawn
into a wire of 1.6 mm dia. which was then annealed for
two hours at 1100°C inside a protective atmosphere.
The tests were carried out on wires of 1.6 mm dia. and
130 mm long. Fig.1 shows oscillograms of the elongation,
the temperature and the drop in the stress in the case

Hardening of the austenite in the case of martensitic transformation. (Cont.)

of heating at a rate of $3000^{\circ}\text{C}/\text{sec}$ of an austenite specimen after preliminary holding for one and a half hours at -75°C . In Fig.2 the thermal and dilatometric curves are reproduced for repeated heating. Fig.3 shows the increase in strength of the austenite in the case of reverse martensitic transformation for a heating speed of $1000^{\circ}\text{C}/\text{sec}$. Fig.4 shows the influence of the speed of heating on the hardness after reverse martensitic transformation. Fig.5 shows the change in the properties of the austenite as a function of the speed and temperature of the heating after reverse martensitic transformation, whilst Fig.6 shows the kinetics of the softening of the alloy after cooling down to -75°C and isothermal annealing at temperatures exceeding the α to γ transformation temperatures. The maximum stabilisation effect is observed after the first cycle of the treatment; with increasing number of cycles a further stabilisation of the austenite takes place but for the selected heat treatment, applying temperatures of -75 to $+800^{\circ}\text{C}$, no full stabilisation was obtained even after five cooling plus heating cycles. The temperature of the reversible martensitic transformation remains unchanged. An increase in the heating speed from 100 to $10\ 000^{\circ}\text{C}/\text{sec}$ also does not

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Hardening of the austenite in the case of martensitic transformation. (Cont.)

reveal an appreciable influence on the temperature of the reversible martensitic transformation. The properties of the austenite change appreciably due to phase hardening; a single stabilisation treatment brings about an increase in the strength from 73 to 95 kg/mm² with a simultaneous decrease in the elongation from 34 to 20% and there is a considerable increase of the yield point. Increased heating speeds shorten the time of holding of the alloy at the maximum temperatures and lead to higher strength values. Increase of the strength of the austenite by phase hardening can be of considerable practical interest when using metastable austenitic steels as a structural material. 6 graphs; 5 references, 2 of which are Russian.

Card 3/3

CHEREPIN, V. T.

Complex investigation of conversions at high heating velocities. V. N. Grigoriev and V. T. Cherepin (Polytech. Inst. Kiyv). *Zavodskaya Lab.* 25, 322-4 (1957).—An app. is described for the thermographic detn. of conversions at high heating rates. Special tests proved the absence of inertia in the temp. change registration when the thermocouple wires were 1-1.5 mm. thick and welded to the sample at a distance of 0.1-0.15 mm. A simultaneous registration of several parameters permits a better correlation of the results, an improved accuracy of the detn. of the conversion temp., and permits drawing conclusions on the nature of the changes. The app. oscillographically registers the thermal dilatometric curves, the changes in the potential, strength of the current and time, and is described in detail. Heating curves of a steel heated at the rates of 300, 3000, and 8000°/sec. are reproduced. W. M. Sternberg.

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AUTHORS: Gridnev, V. N., Cherepin, V. T. SOV/163-58-2-42/46

TITLE: The Change in Volume in the Electric Heating of Hardened Carbon Steels (Ob'yemnyye izmeneniya pri elektronagreve zakalennykh uglerodistykh staley)

PERIODICAL: Nauchnyye doklady vysshey shkoly, Metallurgiya, 1958, Nr 2, pp. 234-238 (USSR)

ABSTRACT: In the investigation of the change in volume in the electric heating of hardened carbon steels dilatometric and thermal curves were plotted at a rate of heating of up to 1000°/sec. The distribution of the temperature over the samples at different rates of heating were investigated. The results obtained showed that also at a rate of heating of more than 1000-1500°/sec. a quantitative determination of the volume effect is possible. To calculate the volume effect according to the dilatometric method it is necessary to determine the dependence of the expansion coefficient on the temperature. A simple method of calculation of the volume effect in phase transformations by means of dilatometric curves was suggested:

$$de = S_{\alpha\beta\gamma} = \Delta L$$

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SOV/153-58-2-42/46

The Change in Volume in the Electric Heating of Hardened Carbon Steels

where Δv is numerically equal to the magnitude of the linear transformation effect.

By this method the volume effect in the electric heating of hardened carbon steels as dependent on the rate of heating and the carbon concentration was measured. At a different rate of the electric heating (up to 10000°/sec) of the hardened steel with 1,13%, 0,77%, 0,54% and 0,43% carbon the magnitude of the volume effect remains unchanged. When the carbon content is increased the volume effect in martensite increases, too. The thermal expansion coefficient of martensite is at 25-170°C

$15 \cdot 10^{-6}$ /degree, at 270-360°C $9 \cdot 10^{-6}$ /degree, at 500-700°C

$14 \cdot 10^{-6}$ /degree. There are 4 figures and 5 references, 5 of which are Soviet.

ASSOCIATION: Kiyevskiy politekhnicheskij institut (Kiyev Polytechnical Institute)

SUBMITTED: October 12, 1957

Card 2/2

CHEREPIN, V. T.

129-4-3/12

AUTHORS: Gridnev, V. N., Doctor of Technical Sciences, Professor,
and Pemyakov, V. G., Candidate of Technical Sciences,
and Cherepin, V. T., Engineer.

TITLE: Magnetometric investigation of electric tempering of
steel. (Magnitometricheskoye issledovaniye
elektrootpuska stali).

PERIODICAL: Metallovedeniye i Obrabotka Metallov, 1958, No.4,
9-16 (USSR).

ABSTRACT: The aim of the work described in this paper was to
investigate the processes taking place during high
speed electric heating of hardened carbon steel and
to study the phase composition produced as a result
of electric tempering by heating to various temperatures.
The investigations were effected on the carbon steels
Y8A and Y12A (compositions respectively in %:
0.75 to 0.85 C, 0.25 to 0.35 Mn 0.30 Si max,
0.20 Cr max, 0.25 Ni max, 0.020 S max, 0.030 P max;
1.10 to 1.25 C, 0.15 to 0.25 Mn, 0.30 Si max,
0.20 Cr max, 0.25 Ni max 0.020 S max, 0.030 P max.)
using specimens of 1.5 mm dia., 130 mm length which were
hardened from 1050°C in water and for reducing the
quantity of residual austenite they were slowly cooled
to -183°C in liquid oxygen. Appropriate measures were

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129-4-3/12

Magnetometric investigation of electric tempering of steel.

taken to prevent oxidation and decarburisation during heating. During the tests the following were recorded simultaneously: temperature of the specimen, elongation, voltage drop across the specimen and the intensity of the current flowing through the specimen. In Fig.1 the oscillogram is reproduced ^{which was} obtained during heating of a hardened specimen of Y12A steel with a speed of 1200°C/sec. Results of magnetic investigations of repeated heating and cooling are reproduced in Fig.2, whilst the graphs, Fig.3, show curves of repeated heating and cooling, obtained after electric tempering, by heating to various temperatures and subsequent tempering at 220°C for 100 hours. Fig.4 shows the softening of steel with 0.2% C deformed in the cold state and heated electrically with a speed of 1700°C/sec. In Fig.4 curves are reproduced of repeated heating and cooling recorded after electric tempering of Y12A steel containing about 20% of residual austenite. Fig.6 shows thermal and dilatometric curves of heating of the steel Y12A with various contents of residual austenite. On the basis of the results, the authors arrive at the following conclusions:

Card 2/4 1. For heating speeds of hardened specimens of up to

129-4-3/12

Magnetometric investigation of electric tempering of steel.

10 000°C/sec the decomposition of the martensite and the carbide reactions proceed in accordance with relations observed during slow heating; the phase state of the decomposition products is determined solely by the conditions of the tempering process.

2. In the case of high speed heating, the decomposition of the residual austenite is suppressed; however, after heating of the steel to temperatures exceeding the beginning of the third transformation (i.e. above 400°C) the residual austenite decomposes into a ferrite-carbide mixture. Reduction of the stability of the residual austenite is caused apparently by the considerable volume effect of the third transformation.

3. During the third transformation the low temperature carbide becomes transformed into intermediate carbide. This process is accompanied by a change in the volume, in the magnetisation and in the heat capacity. Formation of cementite from the intermediate carbide in the case of continuous heating proceeds at higher temperatures and is also accompanied by a change in the magnetisation. Cementite can also form at lower temperatures, however, this requires a considerable time.

Card 3/4

Magnetometric investigation of electric tempering of steel. ^{129-4-3/12}

There are 6 figures and 9 references, all of which are Russian.

ASSOCIATION: **Kiyev** Polytechnical Institute.
(Kievskiy Politekhnichekiy Institut).

AVAILABLE: Library of Congress.

Card 4/4

AUTHOR: Cherepin, V.T. 21-58-5-19/28

TITLE: Softening of Cold-Strained Low- Carbon Steel at High Speeds of Electric Heating (Razuprochneniye kholodnodeformirovannoy malouglerodistoy stali pri vysokikh skorostyakh elektro-nagreva)

PERIODICAL: Dopovidi Akademii nauk Ukrain's'koi RSR, 1958, Nr 5, pp 540-543 (USSR)

ABSTRACT: Re-crystallization processes at high speeds of heating have not been sufficiently studied thus far, although they are important in view of extensive use of electric thermal treatment in industry. The author has studied the processes of softening of the cold-strained steel with 0.1% C at contact electric heating at the rates of 1,700 and 4,500 degrees per sec, C. The samples were heated to various temperatures and then immediately cooled down by running water. It has been established that re-crystallization takes place at the heating up to 800°C, which results in the changes of mechanical properties, microstructure and fine crystalline structure of the steel. No more than 0.18 sec is needed for the full completion of re-crystallization at a heating rate of 4,500°C per sec.

Card 1/2

21-58-5-19/28

Softening of Cold-Strained Low-Carbon Steel at High Speeds of Electric Heating

There are two figures and 5 references, 3 of which are Soviet, 1 American and 1 German.

ASSOCIATION: Kiyevskiy politekhnicheskij institut (Kiyev Polytechnic Institute)

PRESENTED: By Member of the AS UkrSSR, V.N. Svechnikov

SUBMITTED: October 12, 1957

NOTE: Russian title and Russian names of individuals and institutions appearing in this article have been used in the transliteration

1. Steel--Crystallization

Card 2/2

CHEREPIN, V. I.

SOV/2306

18(4.7): 25(1) PHASE I BOOK EXPLOITATION

Academiya nauk Ukrainskoy SSR. Institut metallofiziki
 Voprosy fiziki metallu i metallovedeniya (Problems in the Physics
 of Metals and Metallography) Kiev, Izd-vo AN Ukrainskiy SSR,
 1975. (Series: Isa. Shornik naukovykh rabot, Nr 9) Errata
 slip inserted. 3,000 copies printed.
 Ed. of Publishing House: V.I. Shkurko; Tech. Ed.: M.I. Yefimova;
 Editorial Board: V.M. Svechnikov, Academician, Academy of Sciences,
 Ukrainian SSR (Resp. Ed.); S.D. Gertsliken, Doctor of Physical
 and Mathematical Sciences; and I.Ya. Dehtyar, Doctor of
 Technical Sciences.

PURPOSE: This collection of articles is intended for scientific
 workers, aspirants, and students in the fields of the physics
 of metals, metallography and metallurgy. It may also be useful
 to students of advanced courses in metallurgical and physical
 sciences.

CONTENTS: This collection of articles deals with the following
 topics: effect of high-speed heating, heat treatment, deforma-
 tion, and crystallization conditions on phase transformations,
 structures, and properties of metals and alloys; the effect of
 additional alloying components on volumetric and intermetallic
 diffusion in alloys; and the effect of repeated quenching and
 and radioactive and ultrasonic treatment on the physical proper-
 ties of alloys. No personalities are mentioned. References
 follow several of the articles.

Larkov, L.M., and I.G. Filozakiy. Problem of the effect
 of Ultrasonics on Phase Transformations of Carbide Metals
 and Alloys 50

This article presents a study of the effect of ultrasonic
 treatment on the aging process of ductile iron and an alloy
 composed of lead and 6 percent tin. Data obtained are
 presented in diagrams.

Gridnev, V.M. Effect of High-speed Heating on the Structure
 and Properties of Fe 54

The author describes an experimental investigation in
 which special devices were used for the simultaneous
 recording of time, temperature, elongation, and changes
 of voltage and amperage. Data presented in the article
 were obtained at the Laboratory for Heat Treatment of
 Kiyevskiy politechnicheskiy Institut (Kiyev Polytechnical
 Institute), and at the Institut metallofiziki, AN USSR
 (Institute for the Physics of Metals, Academy of Sciences,
 Ukr-SSR).

Gridnev, V.M. and V.I. Trefilov. Metastable Transforma-
 tions in Eutectic Cu-Al Alloys 68

The mechanism and kinetics of phase transformations are
 discussed in this paper. Simultaneous motion picture
 recordings with oscillographic measuring of temperature
 made possible the accurate determination of all para-
 meters investigated. The technique used in the experi-
 ment is described, and transformations are presented in
 the form of photographs and diagrams.

Gridnev, V.M., V.I. Trefilov, and A.S. Drachinskiy. Change
 in Mechanical Properties of Ti-Fe Alloys Due to
 Heat Treatment 82

Low-alloy Ti-Fe samples (2.9mm. diameter, 22mm. long),
 slabs, forged and machined, were used. Results
 are shown in diagrams.

Bukhtenko, A.K., V.M. Gridnev, and V.I. Trefilov. Changes
 in Structural Properties of Powder Titanium During
 Vacuum Rolling 89

Samples of titanium IMP-1, made at the Tsentral'nyy
 naučno-issledovatel'skiy institut chernoy metallurgii
 (Central Scientific Research Institute of Ferrous Meta-
 llurgy) and rolled in the laboratory vacuum furnace,
 were subjected to micro- and X-ray structural analysis
 and mechanical testing at room temperature. Results are
 discussed and conclusions drawn.

Gridnev, V.M., and V. I. Cherepin. Phase Transformations
 in Carbon-Steel Alloy Under the Action of Electric Heating 98

This article presents a study of changes from alpha to
 gamma iron dilatation, the critical point, and the
 Curie point for various iron base alloys (Fe-Cu, Fe-Ni,
 Fe-Ti, Fe-Mn, Fe-Cr, and Fe-Si) in the annealed as well
 as the quenched state at varying rates of temperature
 change (500 to 1000°C per second).

S/126/60/010/006/019/022
E111/E452

AUTHORS: Belous, M.V. and Cherepin, V.T.

TITLE: Mechanism of Carbide Transformation in Tempering
Hardened Carbon Steel

PERIODICAL: Fizika metallov i metallovedeniye, 1960, Vol.10, No.6,
pp.912-924

TEXT: The authors point out that according to recent evidence (Ref.2, 5, 11, 12 and 13) on the difference between low-temperature (ϵ -) carbide and equilibrium-cementite, transformation of the former must be accompanied by both crystal-lattice rearrangement and change in chemical composition. Both authors have been active in this field. The present research was aimed at elucidating the general rules governing the mechanism and kinetics of the various stages mainly of the "third transformation" during heating of hardened steel. For most experiments, types γ 8A (U8A) and γ 12A (U12A) steels were used (respective compositions, %: 0.77, 1.13 C; 0.30, 0.22 Si; 0.33, 0.21 Mn; 0.16, 0.12 Ni; 0.11, 0.06 Cr; 0.012, 0.020 S; 0.014, 0.011 P). Specimens were hardened from 1000°C in

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water at room temperature and then immediately immersed in liquid oxygen or in a solid CO₂ - petroleum mixture at -78°C. The study of transformations was carried out with rapid electric heating on an installation providing simultaneous registration of the main parameters and time. Heating rates of 50 to 60000°C/sec were obtainable and heating could be stopped at any desired temperature to be followed after 0.01 to 0.02 seconds by cooling at 1500 to 2000°C/sec by a stream of water. Cherepin (with Gridnev; Ref.14) has described the installation in detail. A type ШРЗ-10 (LGZ-10) installation was used for induction tempering, curves of specimen length and temperature changes being obtained with the aid of a special dilatometric attachment previously described by Belous (with Permyakov; Ref.15) and a type 950-302 oscillograph; cooling here was by air. Thermo-magnetic analysis in strong fields (Ref.16) was also used as described in other papers of the authors (Ref.11, 17, 18). A series of dilatometric measurements with slow (2 to 3°C/min)

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heating at a magnification of 2008 (Ref.19) were made. The calculation of dilatometric curves for rapid heating has already been described (Ref.20. Fig.1 shows a typical combined oscillogram for U12A steel heated at 1700°C/sec, giving elongation, temperature, voltage-drop, current and specific heat (Curves 1, 2, 3, 4, 5 respectively) against time (0.1 sec divisions) the corresponding zero-lines being marked (0 - 1, 0 - 2 and so on). Dilatometric curves for heating rates of 100 to 60000°C/sec are given in Fig.2. Plots of length change and temperature against heating rate (Fig.3, top and bottom graphs respectively) show that tempering processes associated with volume change in the first and third transformations (Curves marked I and III respectively) are fulfilled sufficiently at all the heating rates. With increasing heating rate, the transformation time falls approximately hyperbolically (Fig.4). The authors conclude that the idea of the reverse martensite transformation is not valid for the range of rates studied. Further information on the carbide transformation process was obtained in the tempering experiments. Card 3/6

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in which the combined use of dilatometric and magnetic analysis is particularly fruitful. In Fig.5, the left part gives the dilatometric curve for tempering of U12A steel and the right hand part gives magnetometer deviations as functions of temperature for repeated heating and cooling of a tempered specimen. The authors show a quantitative relation can be established between the value of the observed magnetic effects and the composition of the carbide phase produced in electric tempering up to the temperature of volume-effect completion. The relation shows that x in Fe_xC rises from 2.10 to 2.79 as tempering temperature rises from 470 to 740°C. Similar conclusions were obtained from the results of rapid induction tempering. Fig.7, left and right hand respectively, gives the dilatometric curves and the magnetometer deviations as a function of temperature for U12A steel in repeated heating and cooling of a tempered specimen. For the rearrangement of the carbide-phase crystal lattice in the "third transformation" the authors propose the term "v-transformation" and for the

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composition change "x-transformation". The first gives a cementite-lattice carbide, $Fe_{2.3}C$ (270°C Curie point). Fig.8 shows the percentage-completion of these transformations as functions of temperature. The effect of deformation on transformation is shown in Fig.9 by plots of magnetometer deviations against temperature (heating and cooling), for hardened and tempered U12A steel specimens, cold drawn to 35 to 70.8% deformation; X-ray patterns for undeformed and deformed (70%) specimens are shown in 1 and 2, respectively, of Fig.10; 3, 4 and 5 give, respectively, patterns of carbide residues from undeformed, 39% deformed and 70% deformed specimens. The general conclusion is that the first stage of transformation in tempering is rearrangement (at 380 to 490°C) of the ϵ -carbide lattice into that of cementite; in the second stage gradual diffusion of carbon concentration changes lead to an approach of the carbide to the stable Fe_3C form. There are 10 figures and 32 references: 25 Soviet and 7 non-Soviet. ✓

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Mechanism of Carbide Transformation in Tempering Hardened Carbon Steel

ASSOCIATION: Kiyevskiy politekhnicheskiy institut
(Kiyev Polytechnical Institute)

SUBMITTED: March 29, 1960

Card 6/6

CHEREPIN, V. T.

PHASE I BOOK EXPLOITATION SOV/5511

Nauchno-tekhnicheskoye obshchestvo mashinostroitel'noy promyshlennosti, Kiyevskoye oblastnoye pravleniye.

Metallovedeniye i tekhnicheskaya obrabotka (Physical Metallurgy and Heat Treatment of Metals) Moscow, Mashgiz, 1961. 350 p. Errata slip inserted. 5,000 copies printed.

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PURPOSE: This collection of articles is intended for scientific workers and technical personnel of research institutes, plants, and schools of higher technical education.

COVERAGE: The collection contains papers presented at a convention held in Kiyev on problems of physical metallurgy and methods of the heat treatment of metals applied in the machine industry. Phase transformations in metal and alloys are discussed, and results of investigations conducted to ascertain the effect of heat treatment on the quality of metal are analyzed. The possibility of obtaining metals with given mechanical properties is discussed, as are problems of steel brittleness. The section includes papers dealing with kinetics of transformation, heat treatment, and properties of cast iron. No personalities are mentioned. Articles are accompanied by references, mostly Soviet.

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EO91/E335

AUTHORS: Belous, M.V. and Cherepin, V.T.
TITLE: Changes in the carbide phase of steel under the influence of cold plastic deformation
PERIODICAL: Fizika metallov i metallovedeniye, v.12, no. 5, 1961, 685 - 692

TEXT: The steel Y12A (U12A) in the form of rods of 2.5 mm diameter of the following chemical composition was used for the investigation: 1.13% C, 0.06% Cr, 0.22% Si, 0.21% Mn, 0.12% Ni, 0.020% S and 0.011% P. The specimens were water-quenched from 1 000 °C; the specimens were subjected to tempering for 2 hours at 450 - 700 °C (at intervals of 50 °C) in order to obtain a carbide phase of varying dispersion and were subsequently cold-worked by drawing through a die. The degree of deformation was calculated from the reduction in area. The chief methods of investigation were microstructural, X-ray structural and magnetic analyses. The magnetic characteristics of the specimens were studied by means of a magnetometer with a differential carrier. Annealed armco iron specimens of the following composition

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were used as standards: 0.015% C, 0.19% Si, 0.06% Mn and less than 0.01% S and P. The structure of tempered specimens was studied metallographically to establish the quantitative relationship between the changes in magnetic properties of the carbide on deformation and the carbide particle size. The photomicrographs obtained were used to calculate the average carbide particle size. Apart from the study of the microstructure and magnetic properties, an X-ray investigation of the steel specimens after various mechanical and heat treatments as well as of the carbide deposits precipitated by an electrolytic method, was carried out. It was found that the nature of the action of plastic deformation of steel specimens on the properties of carbide particles depended, to a considerable extent, on the dimensions and shape of the latter. It is mainly the properties of ferrite which change at small reductions in area. Deformation of cementite occurs at large percentages of reduction in area, when the matrix becomes sufficiently hard. Thus, it can be expected that the magnetic properties of cementite will change more noticeably at higher degrees of

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deformation. An increase in the effectiveness of any factor on the structure of carbide particles causes an ever-increasing rise in magnetization on plastic deformation. An irreversible change in the magnetization of deformed specimens occurs between 300 and 600 °C, i.e. at temperatures at which both the carbide phase of the deformed steel and the cementite are paramagnetic. An analysis of the fine crystalline structure of the carbide phase led to the conclusion that an increase in the degree of deformation leads to an ever-increasing breakdown of the zones of coherent dispersion of X-rays and to an increase in secondary stresses. The carbide phase of cold-deformed steel always has a crystalline lattice of the cementite type; the carbon content of this phase is higher than that of cementite and, under certain conditions, can reach approximately 30 at.%. It is concluded that the metastable carbide phase χ_{Fe_xC} , reported by a number of research workers, represents cementite of changed composition. B.A. Apayev, G.V. Kurdyumov, L.I. Lysak and L.S. Moroz are mentioned in the article in connection with their contributions in this field.

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E091/E535

There are 6 figures, 1 table and 21 references: 14 Soviet-bloc and 7 non-Soviet-bloc. The four latest English-language references mentioned are: Ref. 6: D.W. Wilson, Trans. ASM, 1955, 47; Ref. 19: W.R. Thomas and G.M. Leak: J. Iron and Steel Inst., 1955, 180, Part 2; Ref. 20: D.W. Wilson, Acta met., 1957, 5, no. 6; Ref. 21: G. Williamson, R. Smallman - Phil. Mag., 1956, 1, 34. ✓

ASSOCIATION: Kiyevskiy politekhnicheskiy institut
(Kiyev Polytechnical Institute)

SUBMITTED: March 9, 1961

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B124/B201

AUTHOR: Cherepin, V. T.

TITLE: Automatic counter of the vibration number

PERIODICAL: Zavodskaya laboratoriya, v. 27, no. 2, 1961, 219-221

TEXT: This is the description of the scheme of an automatic counter for a torsion pendulum designed for measuring internal friction. The new scheme is simpler and more promising than the unit described in Ref.1. The counter (see Fig.) consists of three thyratrons with a cold cathode of the type MTX-90 (MTKh-90). These thyratrons replace the power transformer and a number of other units. The principle of operation is the same as that of the device described in Ref.1. Impulses whose positive half waves fire the thyatron L_1 are produced in the resistor R_1 (7.8 megohms) when a light ray produced by the reflector that is attached to the oscillating pendulum passes through the a.c. photoresistor. Thereon relay RL_1 responds by contacting for the period in which the photoresistors are illuminated. The pulse sequence at the input of the device and the pulse interval depend

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on the amplitude of the deflection of the light ray. When the amplitude becomes smaller than the distance between the zero point and the photoresistor, adjusted to the "maximum" amplitude, only the photoresistor of the "minimum" amplitude becomes conductive. The interval between the pulse pairs, however, increases considerably. At the same instant, the counting of the vibration number begins. The two-contact relay RL_1 of the type PCM-1 (RSM-1) contacts as soon as one of the two photoresistors becomes conductive. The discrimination of pulses with respect to time is carried out by means of two equal cells on the thyratrons L_2 and L_3 . The constant current obtained by means of a $\Delta P U-27$ (DGTs-27) germanium diode (load R_5-R_6 , filter C_3) is fed to R-C connections consisting of the variable resistors R_7 and R_{12} (68 kilohms) and the condensers C_4 and C_6 ($20\mu F$). The charging time of the condensers depends on the size of the resistors and can be varied continuously. The resistor R_7 is dimensioned such that charging of the pulse capacitor C_4 up to the firing potential L_2 during the interval between two arbitrary successive pulses i.e. when the

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