AUTHOR: Vagarov, V. ; Kruglov, R. I.; Sharapova, T. N.; Babak

TITLE: Industrial use of steels with lowered nickel content

SOURCE: Khimicheskaya promyshlennost', no. 7, 1964, 541-547

TOPIC TAGS: stainless steel, low nickel stainless steel, EP53 stain-

ABSTRACT: To determine the suitability of low-nickel stainless steels
for use in the chemical industry the corrosion resistance of 0K 0h07

Card 1/2

L 9093-65
ACCESSION NR: AP4043256

welded joints of chemical equipment after more than one year of oper-
ation revealed no intergranular corrosion of the parent or weld meta
of the metal in the heat affected zone. Tm10 steel has satis a
tory corrosion resistance to nitrogen-oxide-containing media, in its cli-

4 tables and 3 figures

YEGOROV, V.P. (Sverdlovsk)

The seven-year plan in action. Zhel.dor.transp. 44 no.6:20-24
Je '62.   (MIRA 15:8)

1. Nachal'nik Sverdlovskoy dorogi.
               (Railroads)

BIRKENVAL'D, P.V.; BURDIN, M.P.; GORKIN. S.F.; YEGOROV, V.P.; ZABZHETSKIY,
     V.A.; KOMODOV, A.A.; LAKTIONOV, A.T.; LEBEDENKO, D.P.; LINEVSKIY, A.A.;
     LOBANOV, G.V.; LYAKHOVETSKIY, Z.Ya.; MIROYEVSKAYA, O.H.; MIKHAYLOV,
     P.N.; NIKOLAYEV, S.V.; PAKHODEYEV, V.I.; SOKOLOV, G.V.; STRIZHEV, N.I.;
     SHAPOVALOV, V.A.; YAVKIN, P.Ye.; IVANININ, F.D., redaktor; DROZDOV,
     A.I., redaktor vypuska; SERGEYEVA, N.A., redaktor izdatel'stva;
     BORISOV, A.S., tekhnicheskiy redaktor

     [Handbook of consolidated estimate norms for geological prospecting
     operations] Spravochnik ukrupnennykh smetnykh norm na geologo-
     razvedochnye raboty (SUSN). Moskva, Gos. izd-vo geol. lit-ry. No.7
     [Rotary drilling] Rotornoe burenie. 1950. 175 p.   (MLRA 9:12)
     [Microfilm]

     1. Russia (1923-   U.S.S.R.) Ministerstvo geologii.
          (Boring)

ГЕГОБОР, В Р

AID P - 489

Subject   : USSR/Mining

Card 1/1   Pub. 78 - 3/27

Author   : Yegorov, V. P.

Title   : Causes of delay in derrick-errecting work in the oil
               fields of the Main Western Petroleum Production Region

Periodical : Neft. Khoz., v. 32, #6, 12-16, Ju 1954

Abstract   : The author discusses various causes of delay in the rigg-
               ing and removing of derricks in the Western oil field
               region and the increase of the cost of production from
               140 to 186% over estimates. The use of high power pulley
               installations and mechanical transport by caterpillers
               will considerably reduce delay and the cost of production.
               The author proposes the development of standard types of
               derrick construction with standardized flooring, siding,
               concrete work, and specially trained crews for handling
               heavy pulley equipment.

Institution : None
Submitted   : No date

YEGOROV,V.P., inzhener

Results of a review of efficiency suggestions in the organiza-
tions of the Main Administration of Highways. Avt.dor.18 no.5:2?
S '55.   (MIRA 9:1)
            (Highway departments)

YEGOROV, V.P.

Important mainline in the Urals. Zhel.dor.transp. 39 no.11:86-92
N '57.
(MIRA 10:10)

1.Nachal'nik Sverdlovskoy dorogi.
(Ural Mountain region--Railroads)

AUTHOR: Yegorov, Vladimir Petrovich, Chief Designer   SOV/4-59-1-6/42

TITLE: The Turbines of the Seven-Year Plan   (Turbiny semiletki)

PERIODICAL: Znaniye - sila, 1959, Nr 1, pp 8 - 9   (USSR)

ABSTRACT: Thermal power engineering has begun to make more powerful
               turbines, and the problems involved are described in this
               article. The 7-year plan provides for an increase of 60
               million kw of turbine power plants, whereof 50 million are
               thermoelectric power stations. The author explains how
               greater economy is achieved in building powerful plants
               which produce a much cheaper current. He also tells of the
               difficulties arising in consequence of the transition from
               100,000 kw turbines to those of higher capacity, and of the
               new way in which the problems of automatic control of high-
               power turbines will have to be solved. There is 1 photo.

ASSOCIATION: Leningradskiy metallicheskiy zavod (Leningrad Metal Plant)

Card 1/1

.pa ⅄EGOROV, U. P.

//.5000

81975
S/076/60/034/07/06/003
B015/B070

AUTHORS: Strakhov, B. V., Yegorov, V. P., Lebedev, V. P.,
Kobozev, N. I.

TITLE: The Physical Chemistry of Concentrated Ozone. IX. The
Dependence of the Yield of Nitric Oxide on the Explosion
Temperature of Ozone - Nitrogen Mixtures

PERIODICAL: Zhurnal fizicheskoy khimii, 1960, Vol. 34, No. 7,
pp. 1524-1527

TEXT: Investigations were made on the dependence of NO yield on the com-
position of ozone - nitrogen mixture for constant temperature of explosion
and an initial pressure of 100 torr, as well as for constant compositions
of the initial gaseous mixture. The experiments were performed in an
apparatus already described (Ref. 1). The temperature of the explosion
was controlled by introducing stoichiometric mixtures of methane and
ozone in the explosion pipette. The isotherms of NO yield (Fig. 4) obtained
for the constant temperatures of 3000° and $3500^\circ K$ of explosion show a
maximum for a 40% ozone content in the mixture. If the composition of

Card 1/2

The Physical Chemistry of Concentrated Ozone.
IX. The Dependence of the Yield of Nitric Oxide
on the Explosion Temperature of Ozone - Nitrogen
Mixtures

S/076/60/034/07/06/009
B015/B070
8197₂

the mixture is kept constant (65% O_3 + 35% N_2), NO yield varies with explosion temperatures from 0.6% at $2500°K$ to 3% at $4250°K$, viz., a five-fold increase in the yield for a 1.7-fold increase in temperature. The results obtained are explained on the assumption that the yield varies according to the change in the thermodynamic equilibrium of the reaction $N_2 + O_2 \rightleftarrows 2\ NO$ at the temperature of explosion. Ye. N. Yeremin, A. I. Mal'tsev, Ya. B. Zel'dovich, P. Ya. Sadovnikov, D. A. Frank-Kamenetskiy are mentioned in the text. There are 5 figures and 4 references: 3 Soviet and 1 German.

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

SUBMITTED: October 5, 1958

Card 2/2

L 16934-63
WW/JD/JW/JWD/H   EPR/EPF(c)/EWP(q)/EWT(m)/BDS   AFFTC/APGC   Ps-4/Pr-4   BW

S/076/63/037/004/025/C: 9

AUTHOR: Yegorov, V. P., Lebedev, V. P., Kobozev, N. I.

TITLE: Physical chemistry of concentrated ozone. XIV. Interaction of
            ozone with hydrogen peroxide at low temperatures

PERIODICAL: Zhurnal fizicheskoy khimii, V. 37, No. 4, 1963, 922-924

TEXT: Tests were conducted to determine the possibility of a reaction in
the case of the low temperature interaction of ozone with hydrogen peroxide with
the formation of a higher peroxide of hydrogen. Two series of tests were con-
ducted: 1) bubbling pure ozone through a cooled 60% peroxide, and 2) freezing
pure ozone at the temperature of liquid nitrogen on preliminarily pulverized sol.d
peroxide and holding the resulting mixture for a long period of time (up to 76
hours). In bubbling the 100% ozone through the concentrated (60%) peroxide ther.
is a partial decomposition of the peroxide which increases as the temperature of
the solution goes up. In the case of the condensation of pure ozone no action w.s
detected on the pulverized solid peroxide. There is 1 chart. The most importan·
English-language source reads as follows: D. H. Volman, J. Chem. Phys., 14, 707,
1946.

Association: Moscow State University imeni M. V. Lomonosov

Card 1/2/

PINUS, Emil' Ruvimovich; RADIN, Anatoliy Maksimovich; YEGOROV, V.P.,
    red.; GORYACHKINA, R.A., tekhn. red.

[Cement concrete]TSementobeton. Moskva, Avtotransizdat, 1962.
59 p.   (MIRA 16:3)
            (Concrete) (Pavements, Concrete)

YEGOROV, V.P.

Potentials for increasing traffic speeds and the weight of
trains. Zhel.dor.transp. 42 no.7:33-36 Jl '60.
(MIRA 13:7)

1. Nachal'nik Sverdlovskoy dorogi.
          (Railroads--Trains)

YEGOROV, V.P. (Sverdlovsk)

Potentials for the reduction of labor and material expenditures.
Zhel.dor.transp. 46 no.6:19-23 Je '64.

(MIRA 18:1)

1. Nachal'nik Sverdlovskoy dorogi.

YEGOROV, V. S.

USSR/Metals – Freezing, Effects Martensite   Feb 50

"Application of the Dilatometric Method to Investigating the Martensitic Transformation at Temperatures Below Freezing," I. L. Mirkin, V. S. Yegorov, 8 pp

"Zavod Lab" Vol XVI, No 2

PA 159T61

YEGOROV, V. S.

"Lost Wax Method of Casting Metal Cutting Tools at the Sestrovetsk Plant imeni Voskov," p. 211. in book Mechanization and Automatic Control of Founding Processes, Leningrad, 1957, 224pp.

SEREBRYAKOV, Mikhail Yevgen'yevich. Prinimali uchastiye: VOROB'YEV,
P.A., kand. tekhn. nauk; SIROTINSKIY, V.F., kand. tekhn. nauk;
YEGOROV, V.S., kand. tekhn. nauk; DMITRIYEVSKIY, A.A., doktor
tekhn. nauk, prof., retsenzent; USTINOV, V.F., kand. tekhn.
nauk, dots., retsenzent; DEMUSYAK, A.G., inzh., nauchnyy red.;
MOROZOVA, P.B., red. izd-va; KARPOV, I.I., tekhn. red.

[Interior ballistics of barrel systems and powder rockets]
Vnutrenniaia ballistika stvol'nykh sistem i porokhovykh raket.
3. izd., dop. i perer. Moskva, Oborongiz, 1962.   703 p.
(MIRA 15:12)
(Ballistics, Interior)

YEGOROV, V.S., mashinist

What causes electric power losses? Elek.i tepl.tiaga 6 no.5:19-20 My '62.   (MIRA 15:6)

1. Depo Barabinsk Zapadno-Sibirskoy dorogi.
               (Electric railroads—Management)

KOZHEVNIKOV, S.N.; KUKHTEVICH, G.M., inzh.; KAZAKOV, Ye.A., inzh.;
    YEGOROV, V.S., inzh.; NEVEYKIN, A.V., inzh.

Analyzing the accuracy of weighing on lever-type hopper scales.
Trudy Inst.chern.met.AN URSR 16:15-25 '62.   (MIRA 15:12)

1. Chlen-korrespondent AN UkrSSR (for Kozhevnikov).
            (Blast furnaces—Equipment and supplies)
                     (Remote control)

KOZHEVNIKOV, S.N.; YEGOROV, V.S., inzh.

Frequency meters of speed and travel. Trudy Inst.chern.met.AN URSR 16:66-69 '62. (MIRA 15:12)

1. Chlen-korrespondent AN UkrSSR (for Kozhevnikov).
(Machinery, Kinematics of)
(Electronic measurements)

BEKIN, N.G.; EPSHTEYN, V.G.; Prinimal uchastiye YEGOROV, V.S., inzh.

Investigating the dependence of drive power and screw pressure on the thrust bearing on the technological parameters of the rubber compound injection. Khim. i khim. tekh. 1:371-384 '62.
                                          (MIRA 17:2)

YEGOROV, V.S.; ANDREYEVA, A.G.; FOMENKO, G.D.

Gas cyaniding and cementation of Kh17N2 (EI268) stainless steel.
Metalloved. i term. obr. met. no.3:33-37 Mr '64.   (MIRA 17:4)

ALEKSEYEVSKIY, N.Ye.; DUBROVIN, A.V.; YEGOROV, V.S.

Pulse methods of studying the superconducting properties of alloys.
Dokl. AN SSSR 163 no.5:1121-1123 Ag '65.

1. Institut fizicheskikh problem im. S.I.Vavilova AN SSSR. Sub-
mitted January 16, 1965.   (MIRA 18:8)

YEGOROV, V.S.

Diagram of state of the system: calcium chlorate and water. V. S. Egorov. J. Gen. Chem. (U. S. S. R.) 1, 1266-70(1931) A study was made of the solid phases of the system: Ca(ClO₃)₂ + H₂O at various temps. By thermal analysis the following facts were noted: At -41°, ice + Ca(ClO₃)₂·6H₂O appeared, with 45.5% Ca(ClO₃)₂ present in soln. At -29.8°, Ca(ClO₃)₂·6H₂O + Ca(ClO₃)₂·4H₂O appeared with 55% salt in soln. At 7.8°, the solid phase was Ca(ClO₃)₂·4H₂O + Ca(ClO₃)₂·2H₂O, with 62.7% salt in soln. and at 76° a solid phase Ca(ClO₃)₂·2H₂O + Ca(ClO₃)₂ appeared with 77% Ca(ClO₃)₂ in soln
S. I. Makowsky

Dispersion-type of solid solutions in the system $NiCl_2\text{-}NH_4Cl\text{-}H_2O$. N. S. KURNAKOV and V. S. Kosnov (Bull. Acad. Sci. U.R.S.S., 1936, 507—514).—At 25°, and 50° the solubility curve consists of three parts, one of which relates to hydrated $NiCl_2$ and the two others to the two series of solid solutions which are found to exist. The composition of the solid phases corresponds throughout with $NiCl_2 : H_2O = 1 : 2$. The max. amount of $NiCl_2$ in solid solution at 0° is 5%. At 50° in the NH_4Cl-rich solid solution the $NiCl_2$ content reaches 24.2%, at which val. it is in equilibrium with a solid solution of the second series containing 26.8% $NiCl_2$. At 50° the max. amount of $NiCl_2$ present in the second series is 51.2%. Examination of the crystals indicates that $NiCl_2.2NH_4Cl.2H_2O$ does not exist. The second series of solid solutions is produced by dissolution of NH_4Cl in $NiCl_2.NH_4Cl.2H_2O$ whilst the first series represents a solution of Ni-carnallite in NH_4Cl.

D. C. J.

YEGOROV, V.S.

Microdispersed type of solid solutions in the system nickel chloride-ammonium chloride-water. N. S. Kurnakov and V. S. Egorov. *Ann. secteur anal. phys.-chim., Inst. chim. gén.* (U. S. S. R.) 11, 101–34 (1938); cf. *C. A.* 32, 2417.—The soly. isotherms of the system $NiCl_2$-NH_4Cl-H_2O at $0°$, $25°$ and $50°$ were studied by the previous method. The compn. of solid phases by crystal-optic, crystallographic, sp. vol. and sp. gr. methods showed the existence of a double salt $NiCl_2.NH_4Cl.2H_2O$ (I) and 2 groups of microdispersed systems: (1) solid solns. of I in NH_4Cl in which NH_4Cl is the dispersion medium and I is the dispersed phase, and (2) solid solns. of NH_4Cl in I in which the dispersion medium is I and the dispersed phase is NH_4Cl. The yellow coloring of NH_4Cl crystals is ascribed to the presence of microdispersed inclusions of I (cf. Srebow, *C. A.* 26, 3165). Other bivalent and trivalent metals give with NH_4Cl analogous mutually dispersed systems in the solid state. $NiCl_2.NH_4Cl.6H_2O$ was obtained by isothermic evapn. Partly references.

Chas. Blanc

METALLURGICAL LITERATURE CLASSIFICATION

YEGOROV, V.S

AUTHORS: Grabovskiy, M. A., and Yegorov, V. S.   53-4-7/11

TITLE: Some Cases of Experimental Demonstrations for the General Course in
Physics   (Neskol'ko demonstratsionnykh opytov po obshchemu kursu fiziki).

PERIODICAL: Uspekhi Fizicheskikh Nauk, 1957, Vol. 63, Nr 4, pp. 813-81f (USSR).

ABSTRACT: A device for the demonstration of the motion of the center of mass
of a system "Falling Board": This device consists of a board in
oblique position. One of the ends of this board is held firmly by
means of an electromagnet, while the other end slides, nearly
without friction, by means of balls on a slideway. For the deter=
mination of the path of the center of mass two brushes are fastened
on the system, which are in slight touch with a vertical sheet of
paper. One of the brushes is fastened to the center of mass of the
system, the other somewhat higher. After switching off the electro=
magnet the brush located in the center of mass will draw a straight
line, and the brush located somewhat higher will draw a curved line
(with the curvature directed towards the center of mass). Following
this, a weight is fastened to the upper end of the board. The upper
brush is now in the center of mass. When the experiment was repea=
ted it was found that the upper brush draws a straight line, whereas
now the lower brush draws a curved line the curvature of which is

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Some Cases of Experimental Demonstrations for the General Course. 53-4-7/11
in Physics

directed towards the center of mass. The authors give some practical directions as to the construction of this device. 2. The resonance of a motor suspended on a spring: In the case of resonance motors are able to loosen their fundament. These and similar phenomena can be demonstrated as follows: A small motor is fastened on a cylindrical spring on a massive stand. On the axis of the motor a small rod is asymmetrically fastened, which causes percussions of the frequency of the motor. The first resonance at ~85 rotations per minute manifests itself by a periodical lifting and lowering of the motor. The resonance frequency of the spring depends on the elasticity coefficient of the spring and on the mass of the motor. In the case of the second resonance, at about 170 rotations per minute, the motor oscillated round a vertical axis. With an increase of the number of rotations new frequencies occur. With the highest frequency standing oscillations occur on the cylindrical spring, but the motor remains in its position. In large lecture halls it is advisable to project the shadow of the motor on to a screen. 3. The phenomenon of acoustic resonance on Helmholtz resonators: Four Helmholtz resonators of different size are arranged in such a manner that the holes are on the same level. In front of these holes four similar paper turn-wheels are fastened. In front of the large openings of the resonators a loudspeaker connected with a sound source is moun-

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Some Cases of Experimental Demonstrations for the General Course . 53-4-7/11
in Physics

ted. The turn-wheels which happen to be before the excited resona-
tor then rotate. The dimensions of the apparatus are given. 4.
A small ball in a gas- or liquid jet: A glass tube, one half of
which has a cross section that is about 16 times as great as that
of the other, is connected by means of a rubber tube with a balloon
which contains liquid carbon dioxide under high pressure. In the
wider part there is a ball, the diameter of which is smaller by
about 1 - 1,5 mm than the inner diameter of the wider part of the
tube. The gas flows from the narrower into the wider part of the
tube. Because of the decrease of pressure occurring on the wider
part, it is possible to turn the tube with its wider part directed
downwards without the ball falling out. 5. A "cut" ball: A tennis
ball caused to rotate by an oblique impact is surrounded by rather
complicated currents of air. Therefore, a "cut" ball may change
its direction during flight and may thus deceive the other tennis
partner. For the purpose of demonstrating this application of the
Magnus effect a special device is here described: A direct current
motor of 25 watt power is vertically fastened to a massive stand.
On the motor axis a rubber tube is fastened which is longer by
1 - 2 mm than the axis protruding from the motor. On to the end
of the rubber tube a celluloid table-tennis ball is fastened.

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Some Cases of Experimental Demonstrations for the General Course   53-4-7/11
in Physics

A small disk is pressed on to this ball from above by means of two cylindrical springs. When the motor rotates the ball is taken along by the rubber tubes and rotates with good regularity with the frequency of the motor. The resting as well as the rotating tennis ball can be knocked out of its position by means of a spring. First, the ball is knocked out several times while the motor is not rotating, and in this case it practically always flies in the same direction. However, in the case of a rapidly rotating motor, it flies in another direction.
There are 10 figures.

AVAILABLE: Library of Congress.

Card 4/4

YEGOROV, V. S., and SHUKHTIN, A. M., Moscow

"The Observation of Anomalous Dispersion in the Momentary Processes," a paper presented at the Third International Conference on Ionization Phenomena in Gases, Venice, 11-15 Jun 57.

SO: B-3,087,498.

YEGOROV, V.S.

AUTHORS: Shukhtin, A.M. and Yegorov, V.S.   51-4-25/25
TITLE: An assembly for observation of the anomalous dispersion
         in processes of short duration. (Ustanovka dlya
         nablyudeniya anomal'noy dispersii pri kratkovremennykh
         protsessakh).

PERIODICAL: "Optika i Spektroskopiya" (Optics and Spectroscopy"
            1957, Vol2, No.4, pp.543-544 (U.S.S.R.)

ABSTRACT: D.S.Rozhdestuenskii's "hook" method (Anomalous dis-
         persion, published by the Acadamy of Sciences of U.S.S.R.,
         1951) of observation of anomalous dispersion requires ex-
         posures from several seconds to several minutes. To study
         transient processes (e.g. pulse discharges, shock waves,
         wire explosions etc.) the present authors used the "hook"
         method with a strong light-source of the pulse type. This
         light-source was a glass (30 cm long, 8 mm dia.) discharge
         tube with hollow cathodes. It was filled with H_2 or air at
         several mm of Hg. The pulse was produced by 20 μ F capacit-
         ors charged to 9-11 kV. The pulse duration was less than
         30-50 μ sec. The pulse produced very bright continuous
         spectrum from 6500 to 2200 Å (it is reported by other
         workers that such pulses produce also strong infra-red
         radiation). Interference patterns in the visible region
         were studied with a diffraction grating spectrograph while

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51-4-25/25

An assembly for observation of the anomalous dispersion
in processes of short duration. (Cont.)

for those in the ultraviolet a quartz prism spectrograph
was used. This source was used to study pulse discharges
in neon (at several mm of Hg) of about 300   sec duration.
The circuit for pulse synchronization of the light source
and the neon discharge is given. Anomalous dispersion
"hooks" are shown in a plate around Ne_I lines 6402 Å
$(3s^3P_2 - 3p^3D_3)$ and 6383 Å $(3p^3P_1 - 3p^1P_1)$. There are
four figures and seven references, six of which are Slavic.

ASSOCIATION: Physical Research Institute, Leningrad State
University. (Nauchno-issledovatel'skiy fizicheskiy
institut, Leningradskogo gosydarstvennogo universiteta)

SUBMITTED: November 30, 1956.
AVAILABLE: Library of Congress

Card 2/2

SOV/48-22-6-18/28

AUTHORS: Shukhtin, A. M., Yegorov, V. S.

TITLE: The Observation of Anomalous Dispersion in Processes of Short
                Duration (Nablyudeniya anomal'noy dispersii pri kratkovremennykh
                protsessakh)

ABSTRACT: The so-called "crotch" (kryuk) method developed by D. S.
                Rozhdestvenskiy concerns the obtaining of spectrograms made in
                interferometric systems with low light intensity. The endeavor
                is made here to use this method for spectrometric investigations
                of processes having the character of an explosion and other cases
                in which exposure is restricted to some milliseconds. The light
                source used was a synchronized flashlight source as described in
                this paper (Ref 1), and the spectrograph used is described by
                reference 2. The authors emphasize the fact that only an experi-
                ment was intended to be carried out for the purpose of finding
                out whether it is possible to employ the method mentioned. In this
                experiment a discharge tube (Fig 1) was used which was introduced
                into the beam of the interferometer. The tube was filled with

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The Observation of Anomalous Dispersion in
Processes of Short Duration

neon- or hydrogen gas. A cloud of sodium vapor was produced in
its center by means of a heater. These vapors diffused and formed
a metal mirror on the glass surface near the heater. A current
discharge pulse ($\sim$800 A) was sent through the tube, which was
synchronized with the flashlight. The "crotches" near the lines
of the yellow doublet of sodium were photographed immediately be-
fore the pulse, during the pulse, as well as several microseconds
after it. On this occasion it was found that the anomaly
vanishes during the current impulse, whereas after the pulse it
is several times greater than before. This is explained as a con-
sequence of the stripping of Na atoms from the glass surface.
Moreover, the lack of anomaly during the pulse is explained by
the transition of atoms to states of higher energy as well as by
the effect of negative dispersion. After the pulse dispersion in-
creases rapidly and dies down again in the course of 800-1000 μ
seconds. This process corresponds to the theory of the concentra-
tion of the excited atoms (Ref 3). In the same manner experiments
were carried out with mercury- and magnesium vapor; the results

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SOV/48-22-6-18/28

The Observation of Anomalous Dispersion in
Processes of Short Duration

obtained do, however, not agree with those obtained previously
(with Ne). In conclusion the authors stress the necessity of a
further investigation of this problem. There are 2 figures and
3 references, 1 of which is Soviet.

ASSOCIATION: Fizicheskiy institut Leningradskogo gos. universiteta im.
A. A. Zhdanova (Physics Institute of Leningrad State University
imeni A. A. Zhdanov)

1. Spectroscopy   2. Interferometers—Performance
3. Flashlights—Applications   4. Discharge tubes—Applications

Card 3/3

9(6)

AUTHORS: Shukhtin, A. M., Yegorov, V. S.

SOV/54-59-3-11/21

TITLE: Observation of Anomalous Dispersion by the Method of D. S. Rozhdestvenskiy in the Pulse Discharge in Neon

PERIODICAL: Vestnik Leningradskoge universiteta. Seriya fiziki i khimii, 1959, Nr 3, pp 61-66 (USSR)

ABSTRACT: In strong gas discharges the atoms are in highly excited state which may be determined from the energy distribution. The concentration of the atoms in the various energetic states may be determined by various methods, the most important being the "hook"-method by Rozhdestvenskiy. This method was used in the present paper for condensed pulse discharges. The scheme of the apparatus is described in an earlier paper (Ref 2). The pulse source for the continuous spectrum is represented in Figure 1. The square pulses and bell-shaped pulses with different amplitudes were investigated. Spectrograms were obtained which correspond to various stages of the pulses, and the concentration of the absorbing atoms N and their number f were determined herefrom. Figure 2 gives the results for an atom excitation in the $^3P_2$-level. Maximum dispersion was attained at the end of the

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Observation of Anomalous Dispersion by the Method of   SOV/54-59-3-11/21
D. S. Rozhdestvenskiy in the Pulse Discharge in Neon

plane part of the pulse. Figure 3 shows the time dependence
of the occupation of a level after the switching off of the
current for various levels. Moreover, the influence exercised by
the structure of the backside of the pulse on the atom
distribution is investigated. It was found that the change of
dispersion depends on the steepness of the decrease of the dis-
charge current. After the switching off a strong rise takes
place. In the plane range of the pulse, however, no such
dependence was to be observed. In a bell-shaped pulse of a
duration of 16 μ sec with an amplitude of 60 a a concentration
of the atoms excited in the $^3P_2$ level of $2.8.10^{13}/cm^3$ could be
observed. Figure 4 shows the variation with time of the
concentration N for various levels. With an increase in pressure
in the discharge tube from 1-4 torr the value of dispersion
increased to a maximum. The concentration of the excited atoms in
the first part of the excitation wave is very low and increases
only in the plane part. After the current has been switched off
it strongly increases. This sharp increase is explained by the

Card 2/3

Observation of Anomalous Dispersion by the Method of   SOV/54-59-3-11/21
D. S. Rozhdestvenskiy in the Pulse Discharge in Neon

recombination of ions with electrons. In conclusion, the authors
thank S. E. Frish for the supervision of the work. There are
4 figures and 7 references, 5 of which are Soviet.

SUBMITTED: April 14, 1959

Card 3/3

SHUKHTIN, A.M.; YEGOROV, V.S.; TUMAKAYEV, G.K.

Source of radiation with a continuous spectrum and with single flashes
of short duration. Opt. i spektr. 8 no.3:423-424 Mr '60.
(MIRA 14:5)

(Radiation)

YEGOROV, V.S.;   SHUKHTIN, A.M.

Afterglow and its relation to gas density in a pulse discharge in
He. Opt. i spektr. 9 no. 6:794-796 D '60.   (MIRA 14:1)
     (Neon)   (Electric discharges through gases)

69845

S/051/60/008/03/033/038

24.3300

B201/E191

AUTHORS: Shukhtin, A.M., Yegorov, V.S. and Tumakayev, G.K.

TITLE: A Continuous-Spectrum Emission Source Capable of Single Short-Duration Flashes

PERIODICAL: Optika i spektroskopiya, 1960, Vol 8, Nr 3, pp 423-424 (USSR)

ABSTRACT: The authors describe a light source with continuous emission spectrum capable of single short-duration flashes of great intensity. The main part of the source is a demountable capillary discharge tube (Fig 1). The casing of the tube (13) is a thick Perspex cylinder inside which a porcelain capillary (14) of 3-4 mm internal diameter is fitted. Electrodes (1) and (10) are attached to the cylinder and the outer ends of the electrodes are fitted with windows (2). One of these windows is made of quartz or glass and is used for transmission of the flashes. Under working conditions the windows become dimmed by deposits on them and have to be cleaned or replaced regularly. A lens (5) is used to produce a parallel light beam. An auxiliary (starting) electrode (9) is placed in the middle of the discharge capillary. To reduce the strong inductance of the

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8/051/60/008/03/033/038

E201/E191

A Continuous-Spectrum Emission Source Capable of Single Short-
Duration Flashes

discharge circuit the electrodes were connected directly
to terminals of a capacitor (0.56 μF, charged to 25-30 kV)
used to produce the discharges. The air pressure in the
discharge capillary could be regulated so that at a given
steady potential difference across the tube spontaneous
discharges would not occur and that when a firing pulse
was fed to the tube the discharge would occur rapidly and
easily. In the tube described here the optimum air
pressure was 130-150 mm Hg. The electrical circuit is
shown in Fig 2. The authors used a hydrogen thyratron
TGI1-400/16, which ensured that a discharge was produced
about 1 μsec after an appropriate positive signal was
applied to the thyratron grid. Fig 3, I, shows the
oscillograms of the discharge current (curve a) and the
optical flash (curve 6); the optical flash existed only
during the first half-period of the discharge, i.e. about
3-5 μsec. Fig 3, II, shows the oscillograms of the
optical flash and time marks which represent 1 μsec each.
The spectra of the flashes were found to be continuous

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S/051/60/008/03/033/038
E201/E191

A Continuous-Spectrum Emission Source Capable of Single Short-
Duration Flashes

      between 2200 and 6500 $\overset{\circ}{A}$.

Card   There are 3 figures.
3/3

SUBMITTED: November 12, 1959

S/053/60/071/004/005/005/XX
B006/B067

AUTHORS: Grabovskiy, M. A. and Yegorov, V. S.

TITLE: Some Experiments on the Topic "Rotational Motion"

PERIODICAL: Uspekhi fizicheskikh nauk, 1960, Vol. 71, No. 4, pp. 577-680

TEXT: The authors describe some demonstration experiments for physics
classes of demonstrating some rules governing the rotational motion.
The first device which is described is a cylindrical double spiral which
is perpendicularly fitted onto a stand and which can rotate about its
longitudinal axis. The instrument shown in Fig. 1 (photograph) is
1.1 m high, and the distance between the two windings is 55 mm. The two
spirals form rails on which a metal or wooden sphere may roll. The
uppermost part which is called the "accelerating part" is designed in
such a way that the sphere is supported by the lower rail; as soon as
the speed of the sphere is high enough it rolls downward on the rails
which are now lying on the wall of the cylinder ("perpendicular part of
the winding") (see Fig. 2). With this device a demonstration of the
rolling of the sphere on the perpendicular winding with braked rotation

Card 1/2

Some Experiments on the Topic "Rotational
Motion"   S/053/60/071/004/005/005/XX
                                               B006/B067

of the spiral, a demonstration of the law of the conservation of the
angular momentum, and a demonstration of the motion of the sphere on the
spiral rails if the spiral is rotated (in- or opposite to the direction
of motion of the sphere) are described. Furthermore, a similar device
(Fig. 2) is described which again consists of a double spiral running
at the lateral area of a truncated cone. The upper part of the rail is
considered to be the region of acceleration on which the sphere attains
the necessary speed in order to be able to continue its way on the re-
maining perpendicular part of the spiral. This double spiral is fixed.
Experiments with spheres of different sizes and different weights are
discussed. There are 3 figures.

Card 2/2

20930

9.4120 (1003,1105,1140,1049)

s/057/61/031/003/014/019
B125/B209

AUTHOR: Yegorov, V. S.

TITLE: Measurement of the temperature of an electron gas and of
            charged-particle concentration during a pulsed discharge in
            neon

PERIODICAL: Zhurnal tekhnicheskoy fiziki, v. 31, no. 3, 1961, 352-356

TEXT: The author has already made optical observations by the method of
"crooks" (established by Rozhdestvenskiy). In the present study, he makes
an attempt to measure parameters of a pulsed discharge, such as temperature
of the electron gas and concentration of the charged particles. The con-
cept of electron temperature is meaningful only if the velocity distribu-
tion of electrons is Maxwellian. This is the case with the present con-
ditions, at least approximately. The electron concentration n_e and the

temperature T_e in a pulsed discharge in neon were measured by the two-probe

method for various amplitudes of the discharge current pulse and at
various initial gas pressures. The probes were placed in tubes of 14 and

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S/057/61/031/003/014/019
B125/B209

Measurement of the temperature...

60 mm diameter. The volt-ampere characteristic was ascertained from the points for several dozens of pulses of the discharge current. A combination of all pulses belonging to one cross section forms the volt-ampere characteristic of the double probe with respect to a certain phase of the pulsed discharge. Fig. 1 depicts the experimental arrangement. Fig. 2 shows an instance of a volt-ampere characteristic of the double probe as taken by this method. In the 14-mm tube, the ion current falling on the probe exhibits no peculiarities in the case of high potential differences between the probes. On the oscillogram of the ion current at the 60-mm tube, periodic attenuated oscillations, whose amplitude and frequency increase with the amplitude of the discharge current, can be observed. The temperature of the electron gas was ascertained from the volt-ampere characteristics of the double probe by semilogarithmic graphs. The results of measurements of the electron gas temperature under various conditions and at different times of the pulse discharge, as well as the field-strength values on the discharge axis are compiled in Table 1. T_e

varies only slightly during the short current pulse. The relatively high T_e values during afterglow are explained by a remanent voltage across the

Card 2/8

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S/057/61/031/003/014/019
Measurement of the temperature...   B125/B209

capacitors and by the "tail" of the current pulses which is due to this
voltage. The concentration of charged particles was determined by
evaluation of the ion fractions of the probe characteristics. At these

pressures, the following formula was used: $n_e T_e = 2 \cdot 10^{12} \frac{a}{\lambda^+} \sqrt{AT} \, j_+ \ln \frac{1}{ax_o}$

(1), where λ^+ denotes the mean free path, Q_i the cross section of charge
exchange of the neon ion at 1 mm Hg, A the atomic weight of the gas, T the
gas temperature, j_+ the density of the saturation current to the probe, a

the radius of the probe, 1 the length of the probe, and x_o is a correction

factor near 1. An inaccurate T value does not give rise to greater errors.
Data concerning the density of Ne were ascertained interferometrically.
Table 1 shows the concentrations of charged particles as calculated from
Eq. (1). Under the conditions of the present study, the degree of ioniza-
tion is very low. The greatest error in the n_e values is caused by the

influence of the photoelectric effect upon the probes. When the potential
of the probe is highly negative with respect to the plasma, another current
appears besides the particle current, which is due to short-wave radiation

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Measurement of the temperature...

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S/057/61/031/003/014/019
B125/B209

giving rise to a photoelectric effect on the probes. This additional photocurrent apparently increases the saturation current of the ions. The author thanks A. M. Shukhtin for guidance and Yu. M. Kagan for a discussion. There are 3 figures, 2 tables, and 12 references: 7 Soviet-bloc and 5 non-Soviet-bloc. The two references to English language publications read as follows: Champion, Proc.Phys.Soc., Sect.B,70,2,1957; J. B. Hasted, J. Appl. Phys., 30,no.1,22,1959.

ASSOCIATION: Leningradskiy gosudarstvennyy universitet im. A. A. Zhdanova (Leningrad State University imeni A. A. Zhdanov)

SUBMITTED: February 24, 1960

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Measurement of the temperature...

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B125/B209

Legend to Fig. 1: Diagram of the arrangement. 1 - E = 70 v, 2 - C = 2000 microfarads, 3 - R = 0.6 ohm, 4 - Rogovskiy belt.
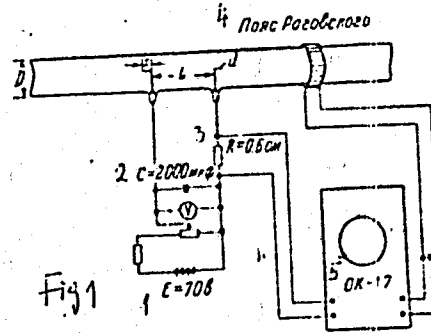
Fig. 1

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S/057/61/031/003/014/019
B125/B209

Measurement of the temperature...

Legend to Fig. 2: P_0 = 4 mm Hg,
rectangular current pulse with an
amplitude of 200 a; t = 50 micro-
seconds.
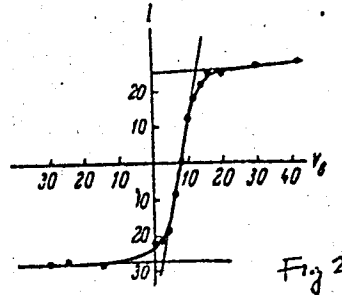
Fig. 2

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Measurement of the temperature...

1 Импульс тока колоколообразной формы, получаемый при апериодическом разряде конденсатора 0,8 мкф в трубке ⌀ 14 мм; длительность импульса по основанию 16 мксек., $I = 60 \div 70$ а; $p_0 = 4$ мм рт. ст.

.10 Импульс тока прямоугольной формы, получаемой при разряде искусственной линии в трубке ⌀ 14 мм; длительность по основанию 220 мксек.; плоская вершина 150 мксек.

11 t, мксек.	12 T_e, °K	13 E, в/см
4	30000	14
6	35000	12
8	37000	9
10	36000	5
12	29000	2
20	$\simeq 7000$	<1

2 $p_0 = 1$ мм рт. ст., $I = 200$ а			3 $p_0 = 1$ мм рт. ст. $I = 300$		
4 t, мксек.	5 T_e, °K	6 E_r, в/см	7 t, мксек.	8 T_r °K	9 E, в/см
30	44000	6	30	36000	7.5
100	40000	6	100	40000	7.5
140	40000	6	140	32000	7

Card 7/8

20930

Measurement of the temperature...

Legend to Table 1:   1 - Bell-shaped current pulse obtained from periodic discharge of an 0.8-microfarad capacitor in a tube of 14 mm diameter. Length of the pulse at its base: 16 microseconds, $I = 60 + 70$ a; $p_0 = 4$ mm Hg. 2 - $p_0 = 1$ mm Hg, $I = 200$ a; 3 - $p_0 = 1$ mm Hg, $I = 300$ a; 4 - t, microseconds; 5 - T_e, $^{\circ}$K; 6 - E in v/cm; 8 - T_e in $^{\circ}$K; E in v/cm; 14 - $p_0 = 4$ mm Hg, $I = 200$ a; 15 - t, microseconds; 16 - T_e, $^{\circ}$K; 17 - E, v/cm; 18 - the same in a 60-mm tube; 18 a - $p_0 = 4$ mm Hg, $I = 600$ a; 11 - t, microseconds, 12 - T_e, $^{\circ}$K, 13 - E, v/cm.

14 $p_0 = 4$ мм рт. ст., $I = 200$ а .

15 t, мксек.	16 T_t, °K	17 E, в/см
50	25000	8
85	26000	8
120	26000	8
155	29000	8
172	21000	6
181	14000	5
190	10000	4
198	9600	4
207	9700	4

18 То же в трубке диаметром 60 мм

18(a) $p_0 = 4$ мм рт. ст., $I = 600$ а

15 t, мксек.	16 T_t, °K	17 E, в/см
20	30000	3
90	25000	$\simeq 1$
150	20000	$\simeq 1$

Card 8/8

39502

S/056/62/043/002/053/053
B108/B102

24.7600

AUTHORS: Alekseyevskiy, N. Ye., Yegorov, V. S., Karstens, G. E.,
Kazak, B. N.

TITLE: Galvanomagnetic properties of transition metal single crystals

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 43,
no. 2(8), 1962, 731-733

TEXT: The change in resistivity of transition metal single crystals
(Pd, Re, Mo) with the change in field strength of a strong magnetic field
(up to some 150 koe) was studied at 4.2°K. The results show that Pd and
Re have open Fermi surfaces. The Fermi surface of Pd is similar to that
of Pt. The square-law increase of resistivity of Mo with increasing
magnetic field strength is indicative of a closed Fermi surface. There
are 2 figures and 1 table.

ASSOCIATION: Institut fizicheskikh problem Akademii nauk SSSR
(Institute of Physical Problems of the Academy of Sciences
USSR)

Card 1/2

Galvanomagnetic properties of ...

S/056/62/043/002/053/053
B108/B102

SUBMITTED: June 8, 1962

$4.$

Card 2/2

S/129/63/000/001/008/017
E073/E335

AUTHORS: Fomenko, G.D., Engineer, Yegorov, V.S. and Andreyeva,
A.G., Candidates of Technical Sciences

TITLE: Investigation of the contact strength of case-hardened
steel 12/3 (12KhN3A)

PERIODICAL: Metallovedeniye i termicheskaya obrabotka metallov,
no. 1, 1963, 23 - 25

TEXT: The effect of carbon concentration in the case-hardened
layer on the contact- and fatigue-strength was investigated on
specimens carburized (for 4 h) to a depth of 1-2 mm in a 15-litre
capacity laboratory furnace. Sintin was used as a carburizer
and the carbon content of the surface layer was about 0.75% if
5 drops/min were applied and about 1.3% if 20 drops/min were
applied. After cooling in air, the specimens were heated in a
salt bath to 780-800 °C, oil-quenched, cooled to -70 °C and
tempered at 150 - 170 °C. The surface was then ground-off to a
depth of 0.1 mm; the surface hardness was 61-63 HRC. The
specimens were made to rotate between clamping rings to simulate
the loading conditions of gear teeth; they were subjected during
Card 1/2

Investigation of ....

S/129/63/000/001/008/017
E073/E335

rotation to contact stresses varying along the circumference, the maximum being 700 kg, as well as to about 2% slip. The maximum contact strength, about 3 350 kg/cm^2, was obtained with a 1.1% C content of the surface layer. In this case, the structure of the surface zone was acicular martensite with fine carbide plates and grains. The fatigue strength increased almost linearly from about 68 kg/mm^2 for 0.6% C of the surface layer to about 75 kg/mm^2 for 0.9% C and remained almost constant with increasing C content. Therefore, to achieve the highest fatigue and contact strength the surface layer of case-hardened steel should be saturated to contain 1 - 1.2% C.

Card 2/2

ACCESSION NR: AP4000479   S/0051/63/015/006/083?/0840

AUTHOR: Yegorov,V.S.; Kozlov,Yu.G.; Shukhtin,A.M.

TITLE: Concentrations of excited atoms in pulse discharges in a mixture of helium and neon

SOURCE: Optika i spektroskopiya, v.15, no.6, 1963, 839-840

TOPIC TAGS: inert gas , excitation, energy transfer, pulse discharge , level popu-
lation, helium, neon, optical pumping

ABSTRACT: Earlier two of the authors (A.M.Shukhtin and V.S.Yegorov, Vestnik LGU,
No.3,1953 and Opt.i spektro,9,794,1960) studied the population of the upper levels
of neon at different stages of a pulse discharge. The present paper gives some of
the results of a similar investigation, also by the Rozhdestvenskiy method of hooks
of pulse discharges in mixtures of neon and helium. The discharges were realized
in a 15-mm diameter, 60-cm long tube. It was found that the introduction of He
results in increase of the peak concentration of Ne in the $2p^5 3sX$ state; at the
same time the population of the $1s2s\,^3S_1$ of He is reduced. The inferred level popu-
lations for Ne and He separately at 0.5 and 4 mm Hg pressure and in mixture with

Card 1/2

ACC.NR: AP4009479

the same pressure ratio are given in a table. The increase in the relative number of excited Ne atoms is attributed to energy transfer incident to elastic and inelastic collisions of the He atoms with the other particles of the decaying plasma. The various possible energy transfer mechanisms are discussed. 'It is concluded that a number of these mechanisms may play a significant role. Orig.art.has: 8 formulas, 1 table and 1 figure.

ASSOCIATION: none

SUBMITTED: 25May63

DATE ACQ: 03Jan64

ENCL: 00

SUB CODEP PH

NR REF SOV: 001

OTHER: 004

Card 2/2

L 17635-63   EWT(1)/EWP(q)/EWT(m)/   S/056/63/044/003/048/053
BDS   AFFTC/ASD/IJP(C)   JD/JG   6/

AUTHOR: Alekseyevskiy, N. Ye. Yegorov, V. S., and Kazak, B. N.

TITLE: Galvanomagnetic properties of rhenium

PERIODICAL: Zhurnal eksperimental'noy i tekhnicheskoy fiziki, v. 44, no. 3,
              1963, 1116-1119

TEXT: The authors and G. E. Karstens reported earlier (Ref. 1: ZhETF, 43, 73,
1962) that rhenium has an open Fermi surface. To study the topological type o
this surface the authors investigated the galvanomagnetic properties of the mol o-
crystals of pure rhenium having different orientation of crystallographic axes
with respect to the axis of the sample. They conclude that the Re Fermi surfa e
consists of two independent parts, the vacancy surface and electron surface. i rom
the measurements of the Hall effect it follows that the electronic surface is the
open one with openings parallel to the hexagonal axis and also in the directi n
within the hexagonal plane. There are 3 figures and 1 table.

ASSOCIATION: Institut fizicheskikh problem Akademii nauk SSSR (Institute for
              Physical Problems of the AS USSR)

SUBMITTED: December 26, 1962
Card 1/1

L 17218-63   EWP(q)/EWT(m)/EDS   AFFTC/ASD   JD/JG
ACCESSION NR: AP3005301   S/0056/63/045/002/0388/ 391

AUTHORS: Alekseyevskiy, N. Ye.; Yegorov, V. S.

TITLE: Galvanomagnetic properties of beryllium

SOURCE: Zhur. eksper. i teoret. fiz., v. 45, no. 2, 1963, 388-391

TOPIC TAGS: beryllium, galvanomagnetic property

ABSTRACT: The variation of the resistance of single-crystal beryl-
lium was investigated in magnetic fields of higher intensity than
hitherto employed, up to 50000 Oersted. In fields up to 35000
Oersted, the increase in resistance in the field was found to be
close to quadratic for all directions of the magnetic field, indicat-
ing that beryllium behaves like a metal with a closed Fermi surface,
but in fields close to 50000 Oersted the dependence of the resistance
on the fields seems to saturate in the [1000] direction. This can
be attributed to the appearance of open trajectories along the

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L 17218-63
ACCESSION NR: AP3005301

hexagonal axis. The Fermi surface of beryllium consists therefore
of two parts -- hole and electron -- with volumes that are equal up
to 35000 Oe, above which open directions appear in the Fermi sur-
face. "The authors are grateful to Academician P. L. Kapitsa for
interest in the work and to G. E. Karstens for help in the prepara-
tion of the specimens and the determination of their orientations.
We take this opportunity to thank B. G. Lazarev, who furnished the
initial beryllium crystallites." Orig. art. has 3 figures and 1
table.

ASSOCIATION: Institut fizicheskikh problem Akademii nauk SSSR
(Institute of Physics Problems, Academy of Sciences SSSR)

SUBMITTED: 16May63	DATE ACQ: 06Sep63	ENCL: 01
SUB CODE: PH	NO REF SOV: 004	OTHER: 011

Card 2/3

ALEKSEYEVSKIY, N.Ye.; YEGOROV, V.S.

Measuring the resistance of single crystals in a pulsed magnetic field. Zhur. eksp. i teor. fiz. 45 no.3:448-454 S '63.
(MIRA 16:10)

1. Institut fizicheskikh problem AN SSSR.
(Crystals—Galvanomagnetic properties)
(Magnetic fields)

maximum conce itration of the excited helium atoms arising afte ter-
mination of t ie discharge i 'he helium-neon mixture are small om-
pared with th concentrations of the atoms of the neon and com ared
with the maximum values of the concentrations of excited helid
atoms observed after termination of the discharge in pure hel m

ASSOCIATION: none

SUBM TTED.   20NoV61   A   1104   3 W

(.d

YEGOROV, V.S.; KOZLOV, Yu.G.; SHUKHTIN, A.M.

Concentrations of excited atoms in a pulse discharge through helium. Opt. i spektr. 17 no.1:154-156 Jl '64.   (MIRA 17:9)

YEGOROVA, V.S.; IVANOVA, V.N.; FUTOKHIN, N.I.

Thienyl aldehyde and its derivatives. Zhur. ob. khim. 34 no.12:
4084-4086 D '64   (MIRA 18:1)

1. Kuybyshevskiy politekhnicheskiy institut.

M. F. Andreyeva, A. G., Yegorov, V. S.; Fomenko, G.

Card 3/3 *pr*

L 3394-66   EWT(m)/EPF(c)/EWP(t)/EWP(b)   IJP(c)   JD/JG
ACCESSION NR: AP5016282   UR/0386/65/001/005/0031/0036

AUTHORS: Alekseyevskiy, N. Ye.; Yegorov, V. S.

TITLE: Investigation of the galvanomagnetic properties of transition metals in strong magnetic fields

SOURCE: Zhurnal eksperimental'noy i tekhnicheskoy fiziki. Pis'ma v redaktsiyu, Prilozheniye, v. 1, no. 5, 1965, 31-36

TOPIC TAGS: magnetoresistance, vanadium, titanium, tungsten, chromium, galvanomagnetic effect

ABSTRACT: The authors present the results of measurements of the galvanomagnetic properties of W, V, Ti, and Cr, carried out in large effective magnetic fields. The measurements were made with apparatus described earlier (ZhETF v. 45, 448, 1963), on single crystals several millimeters long with transverse dimensions approximately 0.5- 0.3 mm. The use of the apparatus has made it possible to make measurements on transition metals in which the ratio of the resistance at room temperature to the resistance at liquid helium temperature was relatively

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L 3394-66
ACCESSION NR: AP5016282

2

small (130 -- 175). In spite of this low ratio, the maximum values of the effective fields were quite high, amounting to $\sim 2 \times 10^7$. The results are illustrated in Figs. 1 and 2 of the Enclosure. When analyzed from the point of view of modern ideas concerning the behavior of electrons in metals, the results indicate that vanadium and titanium have closed Fermi surfaces and chromium has an open Fermi surface. Tungsten, also has a closed surface, but its magnetoresistance change is large, whereas for Ti and V the change is small. Orig. art. has: 2 figures.

ASSOCIATION: Institut fizicheskikh problem im. S. I. Vavilova Akademii nauk SSSR (Institute of Physics Problems AN SSSR)

SUBMITTED: 23Apr65   ENCL: 02   SUB CODE: EM, MM

NR REF SOV: 001   OTHER: 002

Card 2/4

L 3394-66
ACCESSION NR: AP5016282   ENCLOSURE: 01

$$\frac{\Delta\rho}{\rho_{42°K}}$$
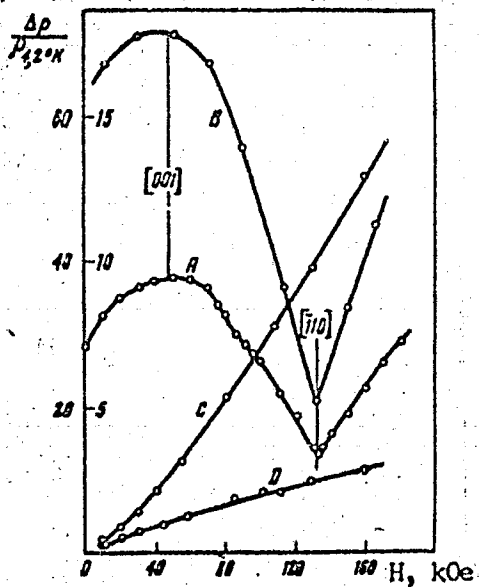
Fig. 1.   A and B - Angular distributions
of the magnetoresistance of single-
crystal Cr at 44 and 74 kOe, respectively.
C and D - Magnetoresistance in the maximum
and in the minimum, respectively. The
scale for curves A and B is on the right,
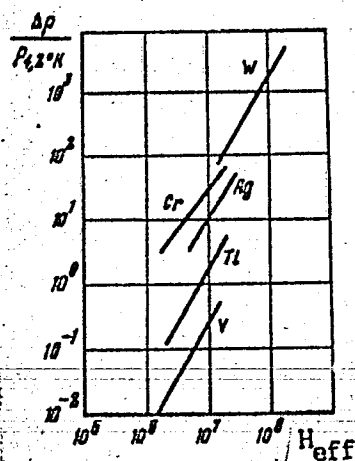and for C and D on the left.

Card 3/4

L 3394-66

Fig. 2. Log-log plot of magnetoresistance

$$(H_{eff} = H\rho_{300}/\rho_{4.2})$$

Card 4/4

YEGOROV, V.S.; TIBILOV, A.S.

Some remarks on processes occurring in a disintegrating plasma formed in a pulse discharge through an He - Ne mixture during generation. Opt. i spektr. 18 no.4:719-721 Ap '65.

(MIRA 18:8)

L 3056-66   EWT(1)   IJP(c)   GG

ACCESSION NR: AP5021274   UR/0020/65/163/005/1121/1113

AUTHOR: Alekseyevskiy, N. Ye.; Dubrovin, A. V.; Yegorov, V. S.

TITLE: Pulse methods of investigating the superconducting properties of alloys

SOURCE: AN SSSR. Doklady, v. 163, no. 5, 1965, 1121-1123

TOPIC TAGS: superconductivity, superconducting alloy, magnetic field measurement

ABSTRACT: Two pulse methods for measuring the critical magnetic field intensity of superconducting alloy wires are described. The first is designed for measurements at comparatively small current densities (10^4 amp/cm^2). An external magnetic field of 150 koe is created in a solenoid (ID 0.5 cm) by means of a discharge of a bank of capacitors (800 μf, 300 v); buildup time to maximum current is 4 msec. The winding of the solenoid is pure Al wire 0.3 mm in diameter, with $\rho_{300K}/\rho_{4.2K}$ = 300 and resistance at liquid helium temperature of 2.5×10^{-2} ohm. A voltage proportional to the current in

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the coil, and consequently to the magnetic field, is passed to the
horizontal plate of an oscilloscope, and simultaneous scanning of
the magnetic field is effected. A given deviation of the beam from
the horizontal corresponds to a given field intensity. The instant
of disruption of superconductivity of the sample is registered by
the appearance of a resistance between the potential electrodes of
the sample. To record the resistance, a d-c measuring current
(several dozen milliamperes, 35 kc) is passed through the sample.
The signal from the potential electrodes and a signal compensating
the measuring current are fed in series to a tuned amplifier.
When the critical field intensity is reached, the resistance appears,
the compensating signal is blocked out, and a curve of the transition
to the normal state appears on the scope. The second method is
designed for higher current densities in a stationary field. A short
current pulse growing linearly with time is passed through the sample,
and a two-beam oscilloscope registers curves of current intensity and
voltage at the potential outputs of the sample. Buildup time of the
voltage pulses is adjustable from 1 msec to 1 min. Pulses from the
generator pass to the feed circuit of the sample from the output of
a three-stage transistorized amplifier (gain, 10^5), and a voltage

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proportional to the current intensity is fed to one input of the
scope. The voltage from the potential outputs of the sample are fed
to the second input. At the instant of disruption of superconductivity
a voltage pulse appears on the scope. The position of this pulse
relative to the current-intensity pulse determines the current inten-
sity of the sample. The two pulse devices can be mated by substitut-
ing a current pulse from the generator for the d-c measuring current.
This pulse is fed to one input of the scope, while the second input
handles the unbalanced signal registering the appearance of the
resistance. The horizontal sweep is effected by a voltage proportional
to the magnetic field. Orig. art. has: 2 figures.   [PW]

ASSOCIATION: Institut fizicheskikh problem im. S. I. Vavilova
Akademii nauk SSSR (Institute of Physical Problems, Academy of Sciences,
SSSR)

SUBMITTED: 15Jan65   ENCL: 00   SUB CODE: EC

NO REF SOV: 001   OTHER: 000   ATD PRESS: 4106

Card 3/3

ALEKSEYEVSKIY, N.Ye.; YEGOROV, V.S.

Galvanomagnetic properties of transition metals in high
magnetic fields. Pis'. v red. Zhur. eksper. i teor. fiz. 1
no.5:31-36 Je '65.   (MIRA 18:11)

1. Institut fizicheskikh problem imeni Vavilova AN SSSR.
Submitted April 23, 1965.

ACC NR: AP7004136   SOURCE CODE: UR/0051/67/022/001/0009/0013

AUTHOR: Yegorov, V. S.; Skrebov, V. N.; Shukhtin, A. M.

ORG: none

TITLE: Concentrations of excited atoms in pulsed discharges in mercury vapor

SOURCE: Optika i spektroskopiya, v. 22, no. 1, 1967, 9-13

TOPIC TAGS: mercury, electric discharge, atomic spectrum, excitation energy, level population, radiative recombination

ABSTRACT: Using an experimental setup described earlier (Opt. i spektr. v. 2, 543, 1957) the authors used the Rozhdestvenskiy hook method to measure the populations of the first excited levels of mercury atoms $6s6p^3P_{0,1,2}$ in different phases of a short-duration current pulse. The hooks were photographed near the visible triplet of mercury ($7^3S_1 - 6^3P_{0,1,2}$) and also near certain lines lying in the near ultraviolet region of the spectrum and corresponding to the transitions $6^3D_{1,2,3} - 6^3P_{0,1,2}$. The pressure range was 0.01 - 1 mm Hg, with the most complete data on the concentrations of the excited atoms obtained at 0.2, 0.5, and 1 mm Hg. The population of the first excited levels first increases with the current and the discharge, reaches a certain maximum value ahead of the maximum of the current, and then decreases on approaching the trailing edge of the pulse. At the instant of termination of the discharge, a sharp growth in the concentration of the atoms of mercury at the first excited states is observed. The resultant maximum value of the concentration of atoms is much

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ACC NR: AP7004136

larger than the corresponding value in the discharge itself, after which, with in-
creasing distance from the trailing edge of the pulse, the population of the levels
decreases more or less rapidly. The results are interpreted on the basis of data
previously obtained by the authors (Opt. i spektr. v. 20, 382, 1966) regarding the
mercury vapor density and the density of the charged particles in different phases of
a pulsed discharge. A numerical estimate ($\sim 10^{-10}$ cm^3/sec) is obtained for the coef-
ficient of volume recombination at the typical values of the other parameters of the
experiment. In addition to measurements by the hook method, the concentration of
the charged particles, the temperatures of the electron gas, and the time variation
of the luminescence of many spectral lines of the mercury were also measured. These
observations have shown that although the population of the different excited levels
of mercury in a decaying discharge plasma is determined essentially by impact-
radiative recombination, there are other mechanisms influencing the population of at
least some of the levels. The relative importance of these processes calls for fur-
ther study. Orig. art. has: 3 figures and 2 formulas.

SUB CODE: 20/   SUBM DATE: 19Jun65/   ORIG REF: 004/   OTH REF: 004

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ACCESSION NR: AP4020246   S/0129/64/000/003/0033/0037

AUTHOR: Yegorov, V. S.; Andreyeva, A. G.; Fomenko, G. D.

TITLE: Gas cyaniding and carburizing of stainless Kh17N2-(EI268) steel

SOURCE: Metallovedeniye i termicheskaya obrabotka metallov, no. 3, 1964, 33-37, and insert facing p. 41

TOPIC TAGS: diffusion layer, hardness, carburization, cyanidation, sub zero treatment, Kh17N2 steel, stainless steel

ABSTRACT: The authors investigated the possibility of obtaining a thin layer with a hardness higher than Rockwell hardness 58. For that purpose, steel Kh17N2 specimens were cyanided in a 10-liter laboratory muffle furnace into which pyrobenzol and ammonia were introduced. Air cooling was followed by oil quenching from 1020 C. Finally, the specimens were treated at -70 C and subsequently tempered at -160 C. Hardness was highest after treatment at 700-750 C. The zone with a hardness of $H_\mu = 700$ was 0.075-0.12 mm deep. 40-45 cm^3/min ammonia and 15 to 18 drops pyrobenzol per minute introduced into the furnace were found to enhance hardness which reached $H_\mu = 1040$ without changing the depth of the active

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ACCESSION NR: AP4020246

zone which was 0.5 mm deep after a six-hour holding period. Sub-zero treatment prior to high-temperature tempering did not affect the amount of residual austenite in the layer and the temper hardness. The authors recommend the application of sub-zero treatment at temperatures of -70 C or -120 C for case-hardened Kh17N-2 steel parts. If the sub-zero treatment is applied for the purpose of enhancing hardness characteristics of the carburized layer, the cooling media should have a temperature of -70 C. Volumetric changes are effectively prevented by the application of a sub-zero treatment at -120 C. Orig. art. has: 9 figures.

ASSOCIATION: None

SUBMITTED: 00   DATE ACQ: 31Mar64   ENCL: 00

SUB CODE: MM   NO REF SOV: 003   OTHER: 000

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ACCESSION NR: o AP4031138   S/0056/64/046/004/1205/1207

AUTHORS: Alekseyevskiy, N. Ye.; Yegorov, V. S.

TITLE: Concerning magnetic breakdown in beryllium

SOURCE: Zh. eksper. i teor. fiz., v. 46, no. 4, 1964, 1205-1207

TOPIC TAGS: beryllium, galvanomagnetic effect, magnetic field, re-
sistivity, magnetic breakdown

ABSTRACT: This is a continuation of work reported earlier (ZhETF
v. 45, 388, 1963) and aimed at checking the change in the variation
of resistance with the magnetic field above 50 kOe. The measure-
ments were made on a single crystal of beryllium in different effec-
tive fields at temperatures 4.2 and 78K.   Pulsed magnetic fields
were used in a measurement procedure which was also described earlier
(ZhETF 45, 448, 1963). The results are in good agreement with those
obtained earlier, in that the change in the law of resistance rise

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ACCESSION NR: AP4031138

occurs at the same value of the magnetic field (45 kOe at 4.2K and
40--50 kOe at 78K). This behavior of resistance is attributed again
to magnetic breakdown. It is emphasized, however, that this inter-
pretation of the results is only qualitative and cannot be used as
yet for quantitative estimates. Orig. art. has: 2 figures.

ASSOCIATION: Institut fizicheskikh problem AN SSSR (Institute of
Physics Problems AN SSSR)

SUBMITTED: 05Oct63   DATE ACQ: 07May64   ENCL: 02

SUB CODE: EM, SS   NR REF SOV: 003   OTHER: 002

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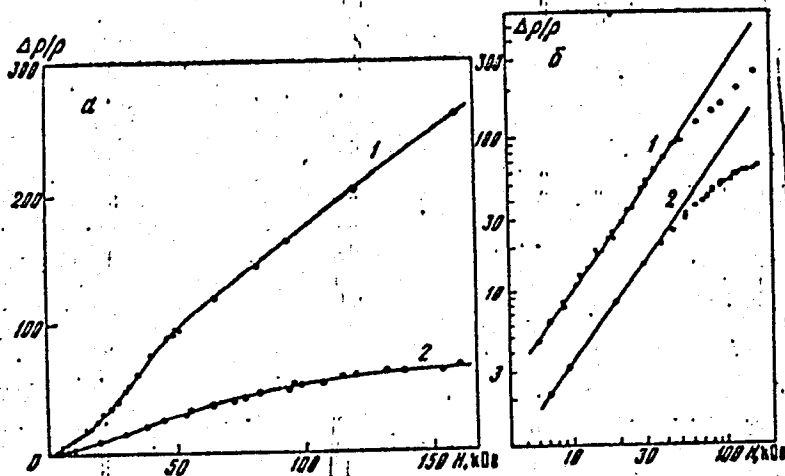
ACCESSION NR: AP4031138
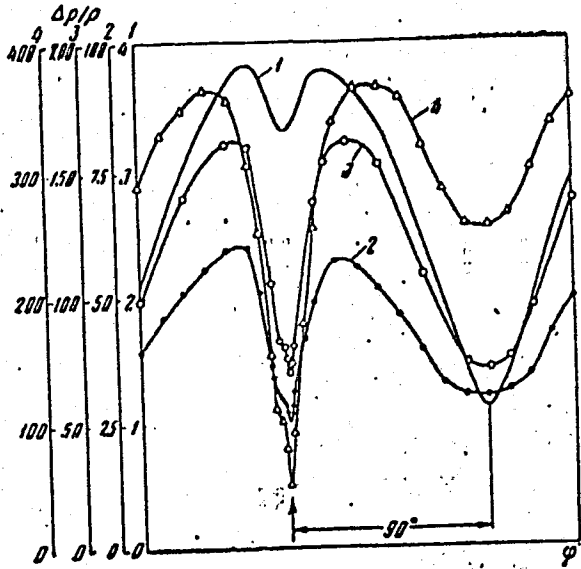
Angular diagrams showing the va-
riation of the resistance of be-
ryllium in a transverse magnetic
field. The hexagonal axis is per-
pendicular to the current. H is
perpendicular to the hexagonal
axis in the direction of the arrow
Curve 1 (obtained in stationary
field) - T = 4.2K, H = 5 kOe;
2 - 78K and 44 kOe; 3 - 4.2K and
34 kOe; 4 - 78K and 150 kOe

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Dependence of change in resistance on the magnetic field when the field is perpendicular to the [0001] axis. Curves 1 - T = 4,2K, 2 - 78K (a - linear scale, b - logarithmic)

Card 4/4

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Dressing the contact track of wirewound resistors of potentiometers.
Priborostroenie no.6:19 Je '65.   (MIRA 18:7)

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nauk, retsenzent; YEGOROV, V.V. [deceased], dotsent, kandidat tekh-
nicheskikh nauk, retsenzent; KHLEBODAROV, S.F., inzhener, retsenzent;
MAYKOPAR, M.B., dotsent, kandidat tekhnicheskikh nauk, nauchnyy re-
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[Problems in electrical engineering, electrical measurement, electric
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dovaniiu. Moskva, Vses.uchebno-pedagog. izd-vo Trudrezervizdat, 1954.
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                                                (MIRA 10:2)

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   SALENKO, S.V., red.; DEVYATKOV, V.F., red.

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[Liberia after the Second World War, 1945-1962] Liberiia
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YEGOROV V.V.

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$B - 3 - 1$

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Mbr., Soils Institute, Acad. Sci. -1947-

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The character of change in the mineralization of ground soil moisture under conditions of the solonchak process in the delta depression at the sea. V. V. Egorov. *Pochvovedenie* (Pedology) 1950, 90-101.—The salt in ground waters of the areas adjoining sea deltas are of river and sea origin. E. traces the changes in the compn. of the ground waters of the soil areas based on the chem. data of the waters in the river at different points, of the sea water, marshes in the area, wells, and compn. of parent material and geologic origin of this.   J. S. Joffe

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Dark meadow soils of alluvial valleys and their agro-
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Describing some of these soils, E. gives chem. data on the
$CaCO_3$ and humus content as well as CO_2, HCO_3, Cl, SO_4,
Ca, Mg, and Na in a water ext.   J. S. Joffe

1952