PETROV, Yu.L.; MALEZHIK, P.V.

Hygienic evaluation of underground drinking water in southern regions
of the Ukrainian S.S.R. Gig.i san. 25 no.8:8-13 Ag '60.
                                                    (MIRA 13:11)
1. Iz Ukrainskogo nauchno-issledovatel'skogo instituta kommunal'noy
gigiyeny.
            (UKRAINE—WATER SUPPLY)

KOSHKIN, Moisey L'vovich, prof.; PETROV, Yu.L., red.; CHUCHUPAK,
V.D., tekhn. red.

[Disinfection of the air in children's and therapeutic
establishments by means of artificial ultraviolet ir-
radiation] Obezzarazhivanie vozdukha v detskikh i le-
chebnykh uchrezhdeniiakh iskusstvennym ul'trafioletovym
izlucheniem. Kiev, Gosmedizdat, 1962. 144 p.
                                        (MIRA 16:5)
   (AIR--PURIFICATION) (ULTRAVIOLET RAYS)

NAYSHTEYN, S.Ya.; DYATLOVITSKAYA, F.G.; LISOVSKAYA, E.V.; PETROV, Yu.L.;
SURKINA, R.M.

Experimental basis for the permissible concentration of
chlorophenylchlorobenzene sulfonate in open bodies of water.
San.okhr.vod.ot zagr.prom.stoch.vod   no.5:145-157 '62.

(MIRA 17.)

1. Iz Ukrainskogo nauchno-issledovatel'skogo instituta kommunal'noy
gigiyeny.

KANDROR, I.S.; BOKINA, A.I.; MALEVSKAYA, I.A.; PETROV, Yu.L.;
        CHERKINSKIY, S.N., red.; SELESKERIDI, I.G., red.;
        GONCHAROVA, L.A., tekhn. red.

        [Hygienic norms for salt content in drinking water] Gi-
        gienicheskoe normirovanie solevogo sostava pit'evoi vody.
        [By] I.S.Kandror i dr. Moskva, Medgiz, 1963. 157 p.
                                                    (MIRA 17:3)
        1. Chlen-korrespondent AMN SSSR (for Cherkinskiy).

KALYUZHNYY, D.N., prof., red.; POZNANSKIY, S.S., dots., red.;
PETROV, Yu.L., red.; ZAPOL'SKAYA, L.A., tekhn. red.

[Problems in protecting the health of children and
adolescents] Voprosy okhrany zdorov'ia detei i pod-
rostkov; materialy. Pod red. D.N.Kaliuzhnogo i S.S.
Poznanskogo. Kiev, Gosmedizdat USSR, 1963. 219 p.
                              (MIRA 16:11)
.. Nauchnaya konferentsiya po respublikanskoy pro-
bleme "Okhrana zdorov'ya detey i podrostkov". 2. Chlen-
korrespondent AMN SSSR (for Kalyuzhnyy).
              (PUBLIC HEALTH)

ACC NR: AP6025679   SOURCE CODE: UR/0413/66/000/013/0146/0146

INVENTORS: Petrov, Yu. M.; Goguyev, S. V.; Naumov, N. F.; Khokhin, V. I.; Sherr, A. S.

ORG: none

TITLE: A pneumatic relay. Class 62, No. 183605

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 13, 1966, 146

TOPIC TAGS: pneumatic device, pneumatic control, valve

ABSTRACT: This Author Certificate presents a pneumatic relay for switching in the duct and the ejector. The casing of the relay contains inlet and outlet pipes and valves (see Fig. 1). To reduce the hydraulic resistance and to improve the productivity, the valves are elastic and have the form of petal-like sectors mounted on saddles fixed in the casing.

Card 1/2   UDC: 629.13.01/06 614.894

ACC NR: AP6025679

Fig. 1. 1 - valve; 2 - saddle
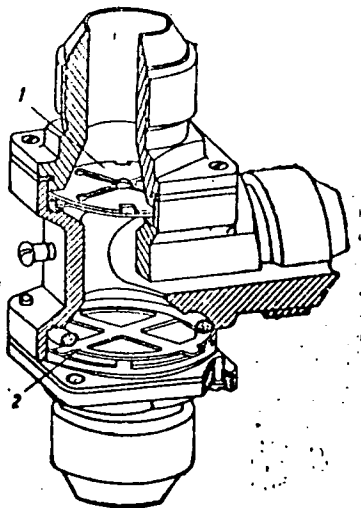
Orig. art. has: 1 figure.

SUB CODE: 13/ SUBM DATE: 18Jun65

Card   2/2

PETROV, Yu. M.

"Excitation Functions for the Reactions $Li^7(p,n)Be^7$, $B^{10}(p,a)Be^7$, and $B^{11}(p,n)C^{11}$ and the Energy Levels of Be^8, C^{11}, and C^{12} Nuclei," by S. P. Kalinin, A. A. Ogloblin, and Yu. M. Petrov, Atomnaya Energiya, Vol 2, No 2, Feb 57, pp 171-174

This work gives cross section versus proton energy graphs for the reactions $Li^7(p,n)Be^7$, $B^{10}(p,a)Be^7$, and $B^{11}(p,n)C^{11}$. Various points on each of the graphs were determined as levels of the compound nuclei Be^8, C^{11}, and C^{12}. The author claims many of these levels have not previously been reported.

Measurements were made for proton energies up to 12 Mev.

Acknowledgement is made to N. A. Vlasov for reviewing the results, to D. A. Panov for his advice, and to co-workers at the cyclotron laboratory.
(U)

Sum 1345

KALININ, S.P.; OGLOBLIN, A.A.; PETROV, Yu.M.

Excitation curves of the following reactions: $Li^7(p,n)Be^7$, $B^{10}(p,\alpha)$ Be^7, $B^{11}(p,n)C^{11}$ and the energy levels of Be^8, C^{11}, and C^{12} nuclei.

Atom.energ. 2 no.2:171-174 F '57.

(Nuclear reactions)

(MLRA 10:3)

KITAYGORODSKIY, A.I.; TSVANKIN, D.Ya.; PETROV, Yu.M.

Large periods in enanthic fibers. Vysokom.soed. 3 no.9:1428
S '61.

(Polyamides)

(MIRA 14:9)

KI.A.GU CLCKIY, ..; .V..IK.I., L..., V, .U..

Large p......s .. p.. t..... ... . Pl....

5 ..c.7:i .. -106. .. ..3.

1. ... . .c.. .. ..

AUTHOR: KALININ,S.P., OGLOBLIN, PETROV,YU.M.

TITLE: The Excitation Curves of the Reactions $Li^7(p,n)Be^7$, ^{PA} - 2263
$B^{10}(p,\alpha)Be^7$, $B^{11}(p,n)C^{11}$ and the Energy levels of the Nuclei of
Be^8, C^{11}, and C^{12}. (Krivyye vozbuzhdeniya reaktsiy $Li^7(p,n)Be^7$,
$B^{10}(p\alpha)Be^7$, $B^{11}(p,n)C^{11}$ i energeticheskiye urovni yader Be^8,
C^{11} i C^{12}, Russian).

PERIODICAL: Atomnaia Energiia, 1957, Vol 2, Nr 2, pp 171 - 174 (U.S.S.R.)
Received: 3 / 1957   Reviewed: 5 / 1957

ABSTRACT: The present work measures these excitation curves up to proton
energies of 12 MeV by means of the stack method. In these re-
actions the nuclei Be^8, C^{11}, and C^{12} are intermediary nuclei.
Stacks of thin samples of the material to be investigated were
irradiated with the proton beam of a 12 MeV cyclotron and after
that the activity of each sample was measured. Samples of a
boron-polystyrol-film produced from natural bron were used as
targets for the reactions $B^{11}(p,n)C^{11}$ and $B^{10}(p,\alpha)Be^7$(the film
had a thickness of from 3,5 to 16 mg/cm^2) With the second of
these reactions targets produced by spraying on bron anhydride on
to an aluminium foil were used in addition to this. For the
measuring of the excitation curve if $Li^7(p,n)Be^7$ LiF-foils of a
thickness of from 2 to 10 mg were used as targets. The excitation

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The Excitation ^{C}urves of the Reactions $Li^7(p,n)Be^7$, ^{PA} - 2263
$B^{10}(p,\alpha)Be^7$, $B^{11}(p,n)C^{11}$ and the Energy Levels of the Nuclei of
Be^8, C^{11}, and C^{12}.

curves of the reactions $Li^7(p,n)Be^7$ and $B^{10}(p,\alpha)Be^7$ were obtained
from the γ - activity of the Be^7 and the excitation curves of the
reaction $B^{11}(p,n)C^{11}$ from the annihilation radiation of the C^{11}.
Also the measuring of these activities is discussed. The thus ob-
tained excitation curves are shown in diagrams.

The excitation curve of the reaction $Li^7(p,n)Be^7$ shows maxima at
the proton energies of 4,9, 6,0, and 7,6 MeV, which correspond to
the known levels of the nucleus Be^8 with the excitation energies
21,5, 22,5, and 23,85 MeV. Besides, curvatures are noticed in the
course of the excitation curve at the proton energies 8,8 and
9,5 MeV as well as in the domain of 3,5 MeV. These curvatures are
probably known by hitherto not known levels of the excitation
energy in the Be^8-nucleus.

Card 2/3

The excitation curve of the reaction $B^{10}(p,\alpha)Be^7$ has distinct
maxima at the proton energies of 4,0 and 5,6 MeV. The first of these
resonances corresponds to the known level of 12,3 MeV of the C^{11}-
nucleus. The second resonance can be explained by the existence

The Excitation Curves of the Reactions $Li^7(p,n)Be^7$, PA - 2263
$B^{10}(p,)Be^7$, $B^{11}(p,n)C^{11}$ and the Energy Levels of the Nuclei of Be^8, C^{11}, and C^{12}.

of an earlier unknown level with the excitation energy of $13,8 \pm 0,2$ MeV in the C^{11} nucleus.

The excitation curves of the reaction $B^{11}(p,n)C^{11}$ are slightly different for the three investigated stacks. But three maxima appear clearly in all three measuring series at the proton energies of 6,6, 8,8, and 10,1 MeV; further a curvature in the course of the curve at the proton energy of 4,5 - 5 MeV. The causes for these maxima are also shown.   (3 illustrations).

ASSOCIATION: Not given.
PRESENTED BY:
SUBMITTED: 13.10.1957
AVAILABLE: Library of Congress.

Card 3/3

BELAVTSEVA, Ye.M.; PETROV, Yu.M., TSVANKIN, D.Ya.

Structure of cellulose treated with phosphotungstic acid.
Vysokom. soed. 6 no.4:684-690 Ap '64.   (MIRA 17:6)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.

L 41277-65   EWP(e)/EPF(s)-2/EWT(m)/EPF(c)/EWG(v)/EPR/EPA(w)-2/EWP(j)/T/
EWP(t)/EWP(k)/EWP(z)/EWP(b)   Pc-4/Pab-10/Pe-5/Pf-4/Pr-4/Ps-4/Pt-10   JD/JW/
ACCESSION NR: AP5008578   8/0286/65/000/006/0113/0113 HM

AUTHOR: Petrov, Yu. M.; Sherr, A. S.

TITLE: Heat-insulating design for aircraft. Class 62, No. 169408

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 6, 1965, 113

TOPIC TAGS: heat insulating design, aircraft, heat insulation

ABSTRACT: This Author Certificate is for an aircraft heat-insulating design (see
Fig. 1 of the Enclosure) consisting of an inner and an outer wall with a porous
screen between. The porous screen is fixed to the inner wall by an absorbing
material. Channels are provided for the circulation of the cooling agent. By
this arrangement the penetration of heat into the inner compartments of the air-
craft is prevented, and the volume of cooling agent required is reduced. Orig.
art. has: 1 figure.   [AC]

ASSOCIATION: none

SUBMITTED: 12Jul63   ENCL: 01   SUB CODE: AC

NO REF SOV: 000   OTHER: 000   ATD PRESS: 3223

Card 1/2
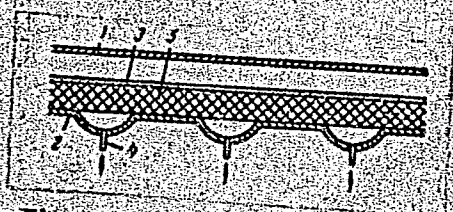
L 41277-65
ACCESSION NR: AP5008578

ENCLOSURE: 01

Fig. 1. Heat insulating design

1 - Outer wall; 2 - inner wall;
3 - porous screen; 4 - channel;
5 - absorbing material.

Card 2/2

GUSAROV, A.D., kand.tekhn.nauk; PETROV, Yu.M., inzh.

Study of the basic parameters of hydraulic conveying of chalk
under winter conditions. Sbor. trud. NIIZHelezobetona no.3:
124-133 '60.

(Chalk)   (Hydraulic conveying)   (MIRA 15:2)

PETROV, Yu.M., inzh.

Hydraulic tube transportation of chalk. Stroi.mat. 5 no.8:
6-8 Ag '59.
(Chalk--Transportation)   (MIRA 12:12)

PHASE I BOOK EXPLOITATION   SOV/5698

Akademiya nauk SSSR. Energeticheskiy institut.

Fizicheskaya gazodinamika i teploobmen (Physical Gas Dynamics
    and Heat Exchange) Moscow, 1961. 112 p. Errata slip
    inserted. 4,000 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Energeticheskiy institut
    im. G. M. Krzhizhanovskogo.

Resp. Ed.: A. S. Predvoditelev, Corresponding Member, Academy of
    Sciences USSR; Ed. of Publishing House: S. L. Orpik; Tech.
    Ed.: S. P. Golub'.

PURPOSE : This book is intended for engineers and scientific workers
    interested in supersonic flow of gases, aerodynamic heat phe-
    nomena, and the dissociation of gases.

COVERAGE: This collection consists of 15 papers written at the
    Laboratoriya fiziki goreniya Energeticheskogo instituta Akademii

Card 1/5

Physical Gas Dynamics and (Cont.)   SOV/5698

/

nauk SSSR (Laboratory of Combustion Physics of the Power In-
stitute of the Academy of Science USSR) on investigations on
the physics of gas dynamics and phenomena of heat exchange in
supersonic flows. In the field of physical gas dynamics motions
of the medium with possible transformations of the substance,
not excluding such processes as the thermal ionization of
molecules and atoms, are discussed. No personalities are mentioned.
References follow most of the articles.

TABLE OF CONTENTS:

Card 2/5

Physical Gas Dynamics and (Cont.)   SOV/5698

Card 4/5

Physical Gas Dynamics and (Cont.)   SOV/5698

With Local Supply of Refrigerant in a Longitudinal Supersonic
Flow   89

Motulevich, V. P., V. M. Yeroshenko, and Yu. N. Petrov. Effect
of Electrostatic Fields on Convective Heat Transfer   94

Motulevich, V. P., and G. P. Malyshev. Effect of Dissociation
on Heat Exchange and Friction in a Plate in a Flow of Air   104

AVAILABLE: Library of Congress

Card 5/5   AC/rn/jw
                                                   11-6-61

34330

S/124/62/000/002/005/014
D234/D302

/C. /5 C c

AUTHORS   Morozov, M.G., Yeroshenko, V.M. and Petrov, Yu.N.

TITLE   Flow in stagnation zones on the surface of bodies in a
               supersonic air stream

PERIODICAL   Referativnyy zhurnal, Mekhanika, no. 2, 1962, 28, abstract
               2B161 (V sb. Fiz. Gazodinamika i teploobmen. M. AN SSSR
               1961, 60-65)

TEXT.   The authors give the results of experimental investigation of the
flow in a rectangular depression on a plane plate in a supersonic air
stream. The experiments were carried out in a supersonic wind tunnel
the Mach number being M = 1.69. By observing the behavior of sounding
devices placed in the depression, the presence of a strong backward flow
was established. Measurements of pressure drop showed that the velocity
of .stream near the front wall of the depression is small. However, the
behavior of sounding devices and the track of a drop photographed on the
transparent lateral wall of the working part of the tube show that there

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Flow in stagnation zones on the ...

S/124/62/000/002/005/014
D234/D302

is no region of gas at rest near the front wall of the depression Graphs
are given illustrating the variation of static pressure at the rear wall
of the depression for different widths of the latter and different heights
of the front wall. To determine the velocity of backward flow near the
bottom of the depression, pressure measurements were carried out with the
aid of sounding devices. As a result, the Mach number of the backward
flow for a certain width of the depression was found to be approximately
0.3. It is noted that the introduction of the sounding device into the
stagnation zone caused an appreciable distortion of the stream and there-
fore the value of Mach number so obtained cannot be regarded as sufficien-
ly accurate. [Abstracter s note Complete translation].

Card 2/2

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S/124/62/000/ 03/001/002
5237/5351

AUTHOR: Petrov, Yu.N.

TITLE: Longitudinal streamlining of a flat, thermally insula-
ted plate in the presence of an obstructing gaseous
film

PERIODICAL: Referativnyy zhurnal, Mekhanika, no. 3, 1962, 1,
abstract 3B572 (Sb. Fiz. gazodinamika i teploobmen,
M., AN SSSR, 1961, 81- 88)

TEXT: Results are given of the experimental investigation of a pla-
te streamlined by a supersonic gas stream with M = 1.7, stagnation
temperature 1100C and st tic pressure in the stream   0.2 atm.,
with various gases delivered through a slit. The temperature of the
tested surface of the plate was determined by means of 10 - 16 chan-
nel-copper thermocouples. The plate was raised above the lower
boundary of the stream in order to avoid the influence of the boun-
dary layer. Cooling gas was delivered tangentially through a narrow
rectangular slit, positioned at some distance from the front edge
along the face, which influences the heat transfer due to the form- }
Card 1/3

Longitudinal streamlining of a ...   S/124/62/000/003/021/033
                                            D237/D304

tion of the laminar boundary layer. Experimental data obtained for
H_2, N_2, Ar are presented in coordinates $\bar{T}'_w = T_w/T_w$ equil. from x =
= x/h where $T_{equil.}$ $94^\circ C$ - equilibrium temperature of the wall,
h - height of the slit. The graphs show that in the starting region
of flow adjacent to the slit, there is a region of constant veloci-
ty of the obstructing flow and $\bar{T}'_w$ remains practically constant and
equal to the temperature of the film. $\bar{T}'_w$ increases with the distan-
ce from the opening of the slit and tends to the equilibrium tem-
perature, T_w equil. Graphs are given of the dependence $\bar{T}_w = T_w$ -
- T_{02}/T_w equil. - T_{02} (T_{02} - stagnation temperature of the gas coo-
lant) on the relative mass velocities of the gas coolant $\bar{\sigma}$ u =
$\rho_2 u_2/\rho_1 u_1$ for various gases (stagnation temperature of N_2, Ar, H_2
are $50^\circ C$, $50^\circ C$ and $25^\circ C$ respectively). The character of the curves   /
leads to the deduction that with increased flow of coolant, the
temperature drops with a delay. An attempt was made to compare the ✓
experimental supersonic data with those calculated according to the

Card 2/3

Longitudinal streamlining of a ...

method for the film cooling of the subsonic flows. The results of the comparison show that the method of film cooling for a subsonic region may be applied in the first approximation to the supersonic region. [Abstractor's note: Complete translation].

Card 3/3

17.4300   10.3000   26 2181

S/124/62/000/003/023/052
D237/D302

AUTHOR: Petrov, Yu.N.

TITLE: Cooling the front surface of a cylinder in a longitu-
            dinal supersonic flow, with local injection of cool.nt

PERIODICAL: Referativnyy zhurnal, Mekhanika, no. 3, 1962, 31,
            abstract 3B623 (Sb. Fiz. gasodinamika i teploobmen,
            M., AN SSSR, 1961, 89 - 93)

TEXT: Results are presented of the experimental study of the flow
front face of a cylinder streamlined by a supersonic gas flow with
M = 1.7 and stagnation temperature 110°C, with the injection of ni-
trogen, argon and hydrogen through the opening positioned near the
leading critical point. Temperature of the gas coolants was at a
constant and equal to 30 - 40°C. Flow patterns photographed with a
Tepler-Maksutov IAB-451 (IAB-451) camera show that on moderate con-
sumption of the coolent, laminar flow occurs on the plane face, and
a turbulent flow along the sides of the cylinder. On increasing the
flow of coolant, the flow on the front face becomes turbulent, and

Card 1/2

Cooling the front surface of a ...

S/124/62/000/ 05/020/000
D237/D502

the turbulence increases on further increase of the amount of coolant, which in turn, leads to a temperature increase on the front face of the cylinder. The temperature, however, decreases with the increase of the thickness of protective film (i.e. with the increase in consumption of coolant). The two reciprocal influences result in the appearance of minima on the curves $\overline{T}_w = \overline{T}_w(\overline{o}\ u)$. In the regions of the 2nd minimum the protective film becomes detached, and the wall temperature $\overline{T}_w$ rises. The already known fact is stressed that the cooling capacity of the gas decreases with increase in its molecular weight. [Abstractor's note: Complete translation].

Card 2/2

S/124/63/000/001/025/080
D234/D308

AUTHORS: Motulevich, V.P., Teroshenko, V.M. and Petrov, Yu.N.

TITLE: Effect of electrostatic fields on convective heat
exchange

PERIODICAL: Referativnyy zhurnal, Mekhanika, no. 1, 1963, 72,
abstract 13446 (In collection: Fiz. gazodinamika i
teploobmen. M., AN SSSR, 1961, 94-103)

TEXT: The authors carried out theoretical and experimental
investigations into the effect of a strong electrostatic field on the
heat exchange of a body surrounded by a gas. The model under investi-
gation was a thin copper wire 0.04 mm in diameter, 79 mm long with
zero potential (which was also heated) combined with a 60 x 60 mm
copper plate, or a 60 mm long brass cylinder, with inner diameter
44 mm, which were connected to a voltage up to 50 kV. The wire was
connected into a bridge circuit which supplied it with current and
heated it, and determined its temperature by measuring its resistance.
The temperature of the wire was fixed and equal to 188°C. When an

Card 1/2

Effect of electrostatic ...   S/124/63/000/00?/025/00?
                                               D234/D308

electric field was applied to the flat model the heat exchange varied
little, but when a voltage exceeding 10kV was applied to the brass
cylinder, the heat exchange increased rather rapidly according to a
linear law and when the voltage was 25 kV the heat flow from the wire
increased by more than 15%. For a voltage of 20 - 25 kV the inter-
ference pattern in the cylinder model changed sharply. On the basis
of a qualitative analysis of the so-called electric convection obser-
ved under these circumstances, a dimensionless parameter was obtained
which describes the quantitative aspect of these phenomena.
/ Abstracter's note: Complete translation /

Card 2/2

S/124/62/000/000/014/02?
D234/D305

AUTHORS: Yanenko, V. E., Morozov, E. I., Mottaev, A. V. ?.,
            Petrov Yu. I. and Pushkin, V. S.

TITLE: A aerodynamic installation with an ... ...
            interferometer

PERIODICAL: Referativnyy zhurnal, Mekhanika, no. ?, ..., abstract
            5263 (V. sb. Fiz. gazodinamika i te..., ...
            men. ..., AN SSSR, 1961, 51-59)

TEXT: A short description of a wind tunnel constructed at the la-
boratory of combustion physics. The tunnel is fed either from an
air bottle battery with a capacity of 17.6 m³ at a pressure of
200 kg/cm², or the air is sucked into the tunnel from the atmo-
sphere. The working part of the installation is placed in a clo-
sed chamber in which a rarefaction up to 5 - 10 mm Hg is produced
by a vacuum installation consisting of five pre-vacuum pumps of
... (RMK-4) type and 12 vacuum pumps of BH-6 (VN-6) and ...
(VN-6J) types. The tunnel is provided with an electric heater an-
Card 1/2

A gas dynamic ...

during an air temperature up to 400°. A set of exchange ...
profiled nozzles makes it possible to change the Mach's num...
from infrasonic values to λ = 3.1 during vacuum work. The ...
sion of the working part is 30 - 40 mm (exact dimensions are ...
given in the paper). There are optical viewing glasses in the ...
walls of the nozzle and in the cylindrical buffer chamber lead...
in diameter. The tunnel is provided with a coordinate device an...
with apparatus for measuring and recording the pressures and t...
peratures (thermocouples, manometers, vacuum meter, hot-wire re...
corders, oscillographs). Optical observation of flow can be mad...
with the aid of the interference-shadow device IT-14 which ...
combination of a Mach-Zender type interferometer with ...
device. Special measures are taken for isolating the optical in...
cushions . The IS-14 device is provided with photographic camera...
ries and illuminating devices of various types, among them ...
spark installation with an exposure less than 10⁻⁶ sec. The pap...
is illustrated by interferograms. [Abstracter's note: ...
translation.]

BARCHUKOV, A.I.; PETROV, Yu.N.

Dipole moment of a CH_3GeH_3 molecule. Opt.i spektr. 11 no.1:129 Jl '61.

(Germanium compounds--Dipole moments)   (MIRA 14:10)

S/685/62/000/000/026/035
D234/D308

AUTHORS: Motulevich, V. P., Petrov, Yu. N. and Makarenko, I. N.

TITLE: Experimental investigation of convective heat exchange
            in electric fields

SOURCE: Akademiya nauk SSSR. Energeticheskiy institut. Fiziches-
            kaya gazodinamika, teploobmen i termodinamika gazov vy-
            sokikh temperatur. Moscow, Izd-vo AN SSSR, 1962, 243-250

TEXT: To produce an electric field with large tension gradients,
the authors used a heated copper wire (40 μ in diameter) combined
with a cylinder or a plane plate. Conclusions: With tensions of
150 - 180 kV/cm near the surface of the wire a corona discharge
is observed, its intensity increasing rapidly with tension. The
presence of the discharge leads to a sharp increase of heat ex-
change, in some cases by several times. An increase of frequency
in the region of corona discharge also leads to an increase of
heat exchange. If the velocity of air flow around the wire reaches
5 - 10 m/sec in the absence of discharge, or 40 - 50 m/sec in the

Card 1/2

Experimental investigation of ...   S/885/62/000/000/028/033
                                       D234/D308

presence of discharge, the electric field ceases to affect the
heat exchange. Reversal of polarity in an electrostatic field does
not affect the heat exchange, which confirms a theory given pre-
viously by two of the authors. If no special measures are taken
against vibrations of the wire, heat exchange may increase con-
siderably owing to mechanical causes which have nothing to do
with electric convection. There are 9 figures.

Card 2/2

S/885/62/000/000/034/035
D234/D308

AUTHORS: Petrov, Yu. N. and Morozov, M. G.

TITLE: Measurement of heat flows by the exponential method

SOURCE: Akademiya nauk SSSR. Energeticheskiy institut. Fizicheskaya gazodinamika, teploobmen i termodinamika gazov vysokikh temperatur. Moscow, Izd-vo AN SSSR, 1962, 300-303

TEXT: The authors investigated the effect of the 'history' of the boundary layer on the measurement of heat flows on cylinders, wedges, cones and plates in supersonic air streams. The experiments are described in detail. Conclusion: in all experimental measurements of heat exchange with supersonic flows using nonstationary methods one must take into account the 'history' of the boundary layer, i.e. the initial temperature distribution and the variation of heat exchange along the surfaces. There are 4 figures and 1 table.

Card 1/1

PETROV, Yu. N.; NEFEDOV, Ya. N.

Visual measurement devices. Mashinostroitel' no.12:30 D '62.
(MIRA 16:1)

(Gauges)

S/10?/62/007/003/ /029
5266/0302

AUTHORS: Barchukov, A.I., and Petrov, Yu.N.

TITLE: Quality of disc resonators

PERIODICAL: Radiotekhnika i elektronika, v. 7, no. 3, 1962,
414 - 415

TEXT: The purpose of the paper is to determine experimentally the
dependence of the quality of a disc resonator on the distance bet-
ween the discs. According to simple theory the quality of the reso-
nator is proportional to its length. This approach takes into ac-
count only the losses in the plates. However, if the slot and if
large the radiation losses are no longer negligible and the qua-
ty of the resonator decreases. In the experimental set-up the au-
hors used plates 190 mm in diameter and employed two wavelengths
1 and 2 [Abstractor's note: Numerical values not given]. The qua-
lity depended very much on the parallelism of the plates. The mea-
sured Q (plates adjusted to be as parallel as possible) is plotted
in units of 10.000 against the number of half wavelengths. In the

Card 1/2

Quality of disc resonators   S/109/62/007/003/007/13?
                                               D236/D302

olate diameter to wavelength ratio is larger, a higher than to ob-
tained. The apparatus was used for spectroscopic absorption mea-
rements. There are 2 figures and 5 references: 2 Soviet-bloc and
3 non-Soviet-bloc. The references to the English-language publica-
tions read as follows: A.J. Fox, T. Li, Bell System Techn. J., 196
40, 2, 489; Quantum Electronic Symposium, p. 59, Columbia Univer-
sity Press, N.Y., 1960; G.D. Boyd and I.P. Gordon, Bell System
Techn. J., 1961, 40, 2, 489.

SUBMITTED: February 13, 1961

Card 2/2

GRIDNEV, V.N.; PETROV, Ya.N.

Electron microscopy of the structure of electron centers in
Sbor.nauch.trud. Inst. metal.fiz. AN URSR no.19:30-40 '...

(MIRA)

PARIK , .N.;   REF , Y. N.; R KE ATA, . .T.

L 58560-65   EWA(k)/FBD/EWG(r)/EWT(1)/EEC(k)-2/EEC(t)/T/EEC(b)-2/EWP(k)/EED-2/
EWA(m)-2/EWA(h)   Pn-4/Pn-4/Po-4/Pf-4/Pae-2/Peb/P1-4/P1-4   IJP(c)   CC/WG

ACCESSION NR: AP5013671

UR/0386/65/001/001/0039/0041

AUTHOR: Petrov, Yu. N.; Prokhorov, A. M.

TITLE: 75-micron laser

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki. Pis'ma v redaktsiyu.
Prilozheniye, v. 1, no. 1, 1965, 39-41

TOPIC TAGS: laser, ir laser, gas laser, helium xenon laser

ABSTRACT: The authors first discuss qualitatively the feasibility of a laser oper-
ating in the far infrared and using a gas dischrge. Although in the design of gas
lasers for the far infrared attention is usually paid to close levels of the higher
states, it is noted that in Xe overlap of the p and d series takes place even for
the lower states, so that lasing can be produced with the transition with longest
wavelength between the states 2p and 3d in Xe, namely $2p_5 \rightarrow 3d_5$ (75.5778 μ). Re-
latively high power can be obtained with this transition because lasing is effected
at relatively low energy levels. Emission of a 75.5778 μ wavelength was effected
in the mixtures He + Xe (100:1) at optimal pressure $P_{Xe} = 3.5 \times 10^{-2}$ mm Hg and
Kr + Xe (3:1) at $P_{Xe} = (1.5-2) \times 10^{-2}$ mm Hg. A generator was used with high-

Card 1/2

L 58560-65

ACCESSION NR: AP5013671

frequency discharge and with internal confocal silvered mirrors with reflection coefficients 100 and 95%; the substrates were of crystalline quartz. The length of the discharge quartz tube was 1.80 m and the inside diameter was 6 mm. "The authors are deeply grateful to T. M. Livshits for supplying the far-infrared receiver developed by him."

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

SUBMITTED: 19Feb65   ENCL: 00   SUB CODE: EC

NR REF SOV: 002   OTHER: 003

Card 2/2

PETROV, Yu. N.

Producing porous iron electroplatings and their utilization for
the repair of machine parts. Dokl. AN Tadzh. SSR no. 20:67-70 '57.
(MIRA 11:7)

1. Kafedra remonta mashin Tadzhikskogo sel'skokhozyaystvennogo
instituta.
(Electroplating)

PETROV, YU. N.

13. 58 5 10.' '1

Translation from Referativnyy zhurnal. Metallurgiya 1958, Nr 5 p. '•• USSR

AUTHOR   Petrov, Yu. N.

TITLE.   Effect of Conditions of Electrolysis on Current Efficiency of Iron and Gaseous Hydrogen (Vliyaniye usloviy elektroliza na vykhod po toku zheleza i gazoobraznogo vodoroda)

PERIODICAL   AN TadzhSSR, 1957, Nr 20 pp 71-77

ABSTRACT.   An investigation of the concentration of organic additions on the current efficiency (CE) of Fe and H_2 is made in an electrolyte (E) of the following composition. in g/liter 500 $FeCl_2$ $4H_2O$, 100 NaCl, at 2.2-2.6 pH and 92°C. A study of the effect of temperature acidity, and D_K on the CE of Fe and gaseous H_2 was run in an E of the following composition in g. liter 500 $FeCl_2$ · $4H_2O$, 100 NH_4Cl, 100 $MnCl_2$ · $6H_2O$ 80 glycerol 1.8-2.0 HCl, at a D_K of 10 amps/dm^2 and at 75°. The investigation was run with 2 types of specimens flat and cylindrical, and these. after determination of the CE of gaseous H_2, were employed to determine the H entering the electrolytic plating. It was found that addition of organic substances (glycerol. sugar, gelatin, and dextrin) to a chloride E reduced the CE of gaseous

Card 1/2

137-58-5-10271

Effect of Conditions of (con`)

H_2. The minimum CE of gaseous H_2 corresponds to a concentration of organic additions at which minimum cathode polarization is observed. Addition of 60-80 g glycerol and 30 g sugar per liter of E results in an increase in the CE of Fe whereas addition of 0.2-0.3 g gelatin per liter has no effect on the CE of Fe. In all instances an increase in D_K results in an increase in the CE of Fe and a reduction in the CE of H_2. The CE of Fe rises with increase in E temperature, as does that of gaseous H_2. An increase in the acidity of the E causes a reduction in the CE of Fe and a rise in the CE of gaseous H_2.

N. L

1. Electroplating   . E.
2. Hydrogen--Applications

Card 2/2

Petrov, Yu. N.

AUTHORS: Zakirov, Sh., Z., Petrov, Yu.N.

TITLE: The Determination of Interior Stresses in Electrodeposits   32-12-39/71
(Opredeleniye vnutrennykh napryazheniy v gal'vanicheskikh
pokrytiyakh).

PERIODICAL: Zavodskaya Laboratoriya, 1957, Vol. 23, Nr 12, pp. 1495-1496 (USSR)

ABSTRACT: In this paper a new method of computing internal tensions in electro-
lytic deposits on metal is recommended in that the dependence of the
strength of the electrodeposit on the shape of the bent plate or the
not deforming state of the cathode is taken into account. Black tin
plates having a thickness of $d = 0.3 - 0.5$ mm were used as samples.
Test results showed that the cathode plates were bent during the pro-
cess of electrolysis, and that also the strength of electrodeposits
differed correspondingly. The more curved surfaces had the weakest
electrodeposits, while the strongest were found on the non deformed
cathode surfaces. This is explained by the fact that, during the pro-
cess of bending the cathode surface, a part of the initial internal
stresses is eliminated. In the course of calculations the conclusion
is arrived at that the systematic elasticity of the plate (E) and of
the electrodeposits may be expressed as follows

Card 1/2

The Determination of Interior Stresses in Electrodeposits

$E_{systematic} = \sqrt{E_1 E_2}$ kg/cm², where E_1 denotes the electricity modulus of the plate in kg/cm² and E_2 the elasticity modulus of the electrolytic deposit. A table of values is given. There are figures, 1 table, and 2 Slavic references.

ASSOCIATION. Tadzhi Institute for Agriculture (Tadzhikskiy sel'skokhozyaystvennyy institut).

AVAILABLE: Library of Congress

Card 2/2   1. Metal-Plating stresses

PETROV, YU. N.

Effect of organic substances on the kinetics of the cathode process and the hydrogen inclusion in iron cathode. Yu. N. Petrov. Zhur. priklad. Khim. 30, 720-36(1957).—The effect of org. additives on the potential φ of an Fe cathode in an electrolyte contg. $FeCl_2.4H_2O$ 500 and NaCl 100 or NH_4Cl 100, $MnCl_2.6H_2O$ 100 g./l. was detd. in a cell with a porous glass diaphragm. φ increased with the concn. of the additive, passed through a max. and decreased slightly to a const. value. With 80 g./l. glycerol φ increased by 20 mv., but when 50 g./l. sugar or 0.25 g./l. gelatin was added (with the glycerol) φ increased by 100 and 80 mv., resp. Max. values of φ were obtained with dextrose 40-50 and citric acid 4-6 g./l. added with the glycerol. The plots φ vs. log i were linear functions obeying the rule $\varphi = a + b \log i$, φ decreased as the temp. increased from 76 to 92°, φ increased with the pH of the electrolyte, passing through a max. at pH 4-6.4. This was attributed to the evolution of H simultaneously with the deposition of Fe. The amt. of H in the deposit decreased with the compn. of colloidal-type additives (sugar, dextrin, gelatin, etc.). The min. amt. of H in the deposit was obtained with glycerol 60-80, sugar 30, gelatin 0.2-0.3, dextrose 40-60, or citric acid 2-4 g./l. The H content decreased as the pH increased above 2.3, i.e., from 14.1 to 92.4 mg./100 g. at pH 6.2. The decrease of H at higher temps. was more pronounced in solns. with sugar and gelatin. Large vols. of H found with colloidal-type additives was ascribed to the fact that those additives were occluded in the deposit and their decompd. during the process of H detn. in vacuo at high temps. The evolution of H during its deln. was stepwise; above 60% was evolved as the temp. of the specimen reached 300°, 14.5% at 500°, and 17.5% at 700°.

I. Bencowitz.

PETROV, Yu. N., Doc Tech Sci -- (diss) "Investigation of effects of electrolysis on the mechanical properties of electrolytic iron plating (applied in repairing machine parts)." Len, 1958. 18 pp. (Min Agr USSR, Leningr Agr Inst), 100 copies. xILxx9x58xx116x

Bibliogr: pp 17-18 (10 titles). (KL, 9-58, 116)

- 55 -

SOV/129-58-12-10/12

AUTHOR: Petrov, Yu.N., Candidate of Technical Sciences

TITLE: Influence of Electrolysis Conditions on the Structure
           and Wear Resistance of Electrolytically Deposited Iron
           Coatings (Vliyaniye usloviy elektroliza na strukturu
           i iznosostoykost' elektroliticheskikh zheleznykh
           pokrytiy)

PERIODICAL: Metallovedeniye i Obrabotka Metallov, 1958, Nr 12,
            pp 53 - 56 + 1 plate (USSR)

ABSTRACT: The experiments were carried out for the purpose of
           establishing optimum electrolysis conditions which would
           ensure obtaining dense fine-grain wear-resistant coatings
           of iron which best satisfy the requirements in repair
           shops. Coatings were investigated which were produced in
           baths with electrolyte compositions, as enumerated in
           Table 1, p 53. The wear resistances of the coatings
           were studied on an MI machine under conditions of dry
           friction sliding along cast iron of a hardness of 187 H_B.

           To ensure better reproducibility of the results, the
           investigated specimens were fitted by means of a special
           attachment described by Zakirov and Lyadskiy (Zav. Lab.,
           1955, Nr 10); the experimental work was carried out by

Card1/5

Influence of Electrolysis Conditions on the Structure and Wear
Resistance of Electrolytically Deposited Iron Coatings

Aspirant Sh.Z. Zakirov. The wear resistance of the
coatings was compared with that of standards made of
steel 45G2, high-frequency hardened to a hardness of
45 - 48 R_C and also of steel 20 carburised and quenched
in water to a hardness of 54 - 58 R_C. Prior to grinding,
all the specimens were tempered at 300 $^{\circ}$C. Study of the
microstructures has shown that introduction into the
chlorine electrolyte of organic substances (glycerin,
sugar, gelatine, dextrine, etc) results in obtaining
coatings which are denser and have a finer grain. The
dispersion of the structure was greatest for the coating
obtained with the electrolyte Nr 1 of Table 1, containing
100 g/litre of sodium chloride, 80 g/litre glycerin and
40 g/litre sugar, see Figure 1b (plate). The regime of
the electrolysis also has a large influence on the
structure of the coatings; with increasing cathode
density of the current and with decreasing temperature of
the electrolyte, the structure will consist of the finer
Card2/5 grain of a sorbite-like formation. However, excessive

SOV/129-58-12-10/12

Influe ice of Electrolysis Conditions on the Structure and Wear
. Resistance of Electrolytically Deposited Iron Coatings

increase of the current density and descrease of the
temperature of the electrolyte leads to the formation
of large internal stresses and micro-cracks. For
practical repair purposes, organic mixtures within the
following limits are recommended: 80-100 g/litre glycerin,
30-40 g/litre sugar, 20-50 g/litre dextrine, 0.2-0.3
g/litre gelatine and 2-10 g/litre citric acid. Organic
admixtures also have an influence on the wear resistance
of the iron coatings. Whilst the specimens coated in
electrolytes without organic admixtures showed fatal
wear at a load of 15-20 kg/cm^2, specimens coated in
electrolytes with organic admixtures operated satis-
factorily even under loads of 55 kg/cm^2. At low
specific pressures of 15 kg/cm^2, all the investigated
coatings had an equal rate of wear, 4 - 5 mg for 2 000
revolutions. With a load increase up to 25 kg/cm^2, the
friction coefficient increases to 0.7 - 0.72; a further
increase in the load (up to 45 kg/cm^2) does not affect
the friction coefficient. As can be seen from the data
Card3/5   in Table 2, for each specific pressure, a certain

SOV/129-58-12-10/12
Influence of Electrolysis Conditions on the Structure and Wear
. Resistance of Electrolytically Deposited Iron Coatings

temperature will become established which, under
otherwise equal conditions, depends on the initial
temperature of the specimen. In conclusion, it is
stated that wear-resistant iron coatings with the
optimum properties from the point of view of repair
work are obtained from chlorine electrolytes of the
following compositions:

1. $FeCl \cdot 4H_2O$ 300-600 g/litre
    NaCl   100-150   "
    Glycerin   80-100   "
    Sugar   30- 40   "
    HCl   0.8-3.6   "
    (D_K 20-30 A/dm^2; t = 80-95°)

Card 4/5

SOV/129-58-12-10/12

Influence of Electrolysis Conditions on the Structure and Wear
Resistance of Electrolytically Deposited Iron Coatings

2.	$FeCl_2 \cdot 4H_2O$	300-600	g/litre
	NH_4Cl	75-150	"
	$MnCl_2 \cdot 4H_2O$	50-150	"
	Glycerin	80-100	"
	Dextrine	20- 50	"
	HCl	0.8-3.4	"
	$(D_K$	20-40 A/dm^2; $t = 75-95^\circ)$	

There are 3 figures and 2 tables.

ASSOCIATION: Leningradskiy sel'skokhozyaystvennyy institut
(Leningrad Agricultural Institute)

Card 5/5

PETROV, Yu.N.

Effect of electrolytic conditions on fatigue resistance of
iron electroplates. Dokl. AN Tadzh. SSR 1 no.2:17-22 '58.
(MIRA 12:1)

1.Tadzhikskiy sel'skokhozyaystvennyy institut. Predstavleno chlen-
korrespondentom AN Tadzhikskoy SSR V.A. Starikovym.
(Electroplating)

PETROV, Yu N.

66350

SOV/81-59-19-67366

18.9200, 18.7400

Translation from: Referativnyy zhurnal. Khimiya, 1959, Nr 19, p 66 (USSR)

AUTHORS: Mamontov, Ye.A., Petrov, Yu.N.

TITLE: The Roentgenographic Investigation of Electrolytic Iron

ABSTRACT: Distortions of class II and III in electrolytic iron have been studied in dependence on the concentration of surface-active substances in the electrolyte and the temperature of heating, as well as the structure, the hardness, and the quantity of adsorbed gases in electrolytic Fe. The introduction of sugar and glycerol into the chloride electrolyte increases the distortions of class II and III which pass through a maximum with an increase in the concentration of the additions. The maximum of the distortion of class III corresponds to the maximum of cathode polarization. The distortions of class III are the principal cause for the change in hardness of electrolytic coatings. At heating of electrolytic Fe to $300^\circ C$ the distortions of class II and III increase and pass through a maximum if the initial distortions are in-

Card 1/2

The Roentgenographic Investigation of Electrolytic Iron

66350

SOV/81-59-19-67366

significant. In the case of large initial distortions, heating to $300^\circ C$ has no effect on distortions and at a higher temperature the distortions decrease. The hardness of Fe precipitates changes in an analogous way. The parameter of the Fe crystal lattice does not change at heating to $300^\circ C$, at heating to $700^\circ C$ it decreases and at further temperature increase it remains constant. The changes in the lattice distortions and in the microhardness of Fe precipitates with the heating temperature are explained by the elimination of adsorbed H_2 from Fe at a temperature of up to $300^\circ C$ and by the elimination of H_2 from the solid solution of α-Fe, which causes additional distortions of the crystal lattice and of the hardness. The texture of electrolytic Fe is extremely imperfect.

Z. Solov'yeva

Card 2/2

GRIDNEV, V.N.; PETROV, Yu.N.; TREFILOV, V.I.

Electron microscopy of the carbide phase produced by tempering and electric tempering of carbon steels. Sbor. nauch. rab. Inst. metallogiz. AN URSR no.10:94-103 '59.   (MIRA 13:9)
      (Electron microscopy)   (Steel--Heat treatment)
                  (Phase rule and equilibrium)

PETROV, Yu.N.

Effect of electrolytic conditions on internal stresses of iron
coatings. Dokl.AN Tadzh.SSR 2 no.1:27-32 '59.
(MIRA 13:4)

1. Stalinabadskiy sel'skokhozyaystvennyy institut. Predstavleno
chlenom-korrespondentom AN Tadzhikskoy SSR V.A.Starikovym.
          (Iron plating) (Strains and stresses)

/8/285   1413, 1418, 4016

32030
S/601/60/000/011/006/014
D207/D304

AUTHORS: Gridnev, V. N. Petrov, Yu. N., Rafalovskiy, V. A.
and Trefilov, V. I.

TITLE: Investigating the ω-phase formation in titanium alloys

SOURCE: Akademiya nauk Ukrayins'koyi RSR. Instytut metalofyzyky. Sbornik nauchnykh rabot. no. 11. 1960. Voprosy fiziki metallov i metallovedeniya, 82-86

TEXT: The authors investigated, by electron microscopy and electron diffraction, formation of the ω-phase in Ti-Cr and Ti-Fe alloys. The alloys were prepared in an arc furnace filled with argon and were then forged and annealed. The ω-phase was produced by quenching in the alloys with 5 or 8% Cr and with 5% Fe; the ω-phase particles were highly dispersed at random, and they could be easily separated from the matrix in the Ti-5% Fe

Card 1/3

Investigating the...

32030
S/601/60/000/011/006/014
D207/D304

solid solution with the ω-phase as an intermediate stage. There
are 5 figures and 9 references: 3 Soviet-bloc and 6 non-Soviet-
bloc. The reference to the English-language publication reads
as follows: F. Brotzen, E. Harmon, A. Troiano, J. of Metals,
5, no. 2, 2, 231, 1953.

Card 3/3

PETROV, Yu.N., doktor tekhn.nauk

Effect of the conditions of iron plating on the cathodic evolution
of hydrogen. Trudy Kish.sel'khoz.inst. 26:195-204 '62. (MIRA 16:5)
(Iron plating) (Hydrogen)

PETROV, Yu.N., doktor tekhn.nauk

Effect of the conditions of electrolysis on the kinetics of
cathodic process of iron plating from cold electrolytes. Trudy
Kish.sel'khoz.Inst. 26:205-214 '62.   (MIRA 16:5)
                  (Iron plating) (Electrolysis)

AUTHORS: Dubovyts'ka, ... V., Zasymchuk, O. ..., Larikov, L. N.
and Petrov, Yu. ...

TITLE: X ray methods for the investigation of the kinetics
of growth of recrystallization centers

PERIODICAL: Ukrayins'kyy fizychnyy zhurnal, v. 7, no. 10, 1962,
1154-1156

TEXT: To determine more accurately the dimensions of recrystalli-
zation centers corresponding to the appearance of 'punches', thin
(0.05 mm) carbonyl Ni foils (99.99% Ni) were studied by electron
microscopy, after which x ray photographs at 30 Å wavelength were
taken. Appearance of centers with maximum dimension $L = 4 \times 10^{-4}$ cm
after annealing during 15 min at 1000° corresponds to the appear-
ance of first 'punches' on x ray photographs. Centers with $L =$
7×10^{-4} cm correspond to very large quantities of spots and even
to disappearance of the continuous line background. There is 1
figure.
Card 1/2

X ray methods for ...

ASSOCIATION.

SUBMITTED:

Card 2/2

PETROV, Yu. N.; YAREMCHUK, V. V.

Electromagnetic stigmatizer to the objective lens of the
UEM-100 electron microscope. Zav. lab. 28 no.12:1523-1524
'62.   (MIRA 16:1)

1. Institut metallofiziki AN Ukr-SSR.

(Electron microscope)

GRIDNEV, V.N.; MESHKOV, Yu.Ya.; PETROV, Yu.N.

Electron microscopy of the carbide phase during the electric temper-
ing of chromium steels. Sbor. nauch. rab. Inst. metallofiz. AN URS.
no.17:147-150 '63.   (MIRA 17:3)

DUSHEVSKIY, I.V.; PETROV, Yu.N.

Determination of iron in organic electrolytes. Zav.lab. 29
no.7:807 '63.   (MIRA 16:8)

1. Kishinevskiy sel'skokhozyaystvennyy institut im. M.V.Frunze.
(Iron--Analysis)

GRIDNEV, V.N.; PETROV, Yu.N.

Electron microscopy of the diffusion of carbide phases during
the electric heating of chromium steel. Sbor. nauch. rab.
Inst. metallofiz. AN URSR no.18:115-122 '64   (MIRA 17:8)

L 34103-65   EWT(m)/EWA(d)/EWP(t)/EWP(k)/EWP(b)/EWA(c)   Pf-4/Pad   IJP(c)   JD/HW/JG
ACCESSION NR: AT5005120   S/2601/64/000/019/0148/0154

AUTHOR: Larikov, L. N.; Petrov, Yu. N.; Borimskaya, S. T.

TITLE: Investigation of structural changes with a biphasic decomposition mecha-
nism in Ni- Be alloys

SOURCE: AN UkrSSR. Institut metallofiziki. Sbornik nauchnykh trudov, no. 19,
1964. Voprosy fiziki metallov i metallovedeniya (Problems in the physics of me-
tals and physical metallurgy), 148-154

TOPIC TAGS: biphasic decomposition, work hardening, cell distance, nickel alloy,
beryllium alloy, alloy structure, heterogeneous decomposition, alloy hardness,
xray analysis

ABSTRACT: The authors discuss the structural changes occurring during biphasic
decomposition in 8 x 6 x 2 mm specimens of Ni (99.99%) with 1.92% Be prepared in
a high-frequency vacuum furnace. The initial stages of the decomposition pro-
cesses in supersaturated solid solutions of Be in Ni are characterized by an ap-
preciable work-hardening of the specimens (see Fig. 1 of the Enclosure). At ele-
vated temperatures, maximum work-hardening is induced by shorter holding periods
and lesser quantities of the transformed volume. The interlaminar cell distance

Card 1/4

L 34103-65
ACCESSION NR: AT5005120

was calculated by standard methods and diagrams were plotted showing the effect of the number of cells on cell distance. The mean value of the real minimum distance was derived from extrapolation on the vertical axis of the extrapolated straight line obtained at different isothermal annealing periods. The authors found that in their experiments the value of the minimum interlaminar distance did not change with annealing time but increased with the rise in temperatures, proving that the processes develop under different conditions. Orig. art. has: 6 figures.

ASSOCIATION: Institut metallofiziki AN Ukr.SSR (Metal physics institute, AN Ukr.SSR)

SUBMITTED: 06Jul63   ENCL: 02   SUB CODE: MM
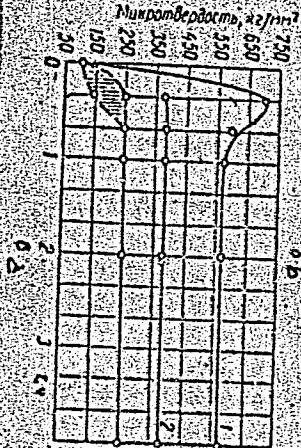
NO REF SOV: 005   OTHER: 005

Card 2/4

L 34103-65
ACCESSION NR: AT5005120   ENCLOSURE: 01
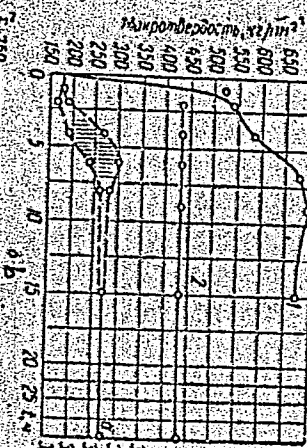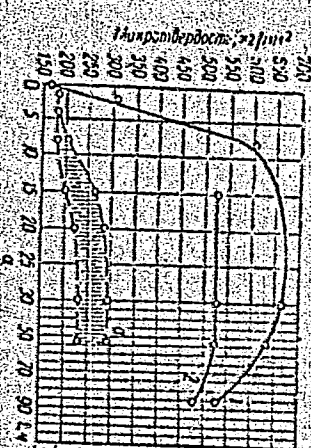
Card 3/4

L 34203-65
ACCESSION NR: AT5005120   ENCLOSURE: 02

Figure 1. Heterogeneous decomposition in an Ni - Be alloy investigated by X-ray
examination and microhardness tests: (a) annealing temperature 450 C; (b) same,
500 C; (c) same, 550 C; (1) microhardness of light zones; (2) microhardness of
dark zones.

Card 4/4

L 24849-65   EWT(m)/EWP(t)/EWP(b)   Pad   IJP(c)/ASD(f)-3/AFETR   JD/HW/JG

ACCESSION NR: AP4046090   S/0126/64/018/003/0385/0388

AUTHOR: Larikov, L. N.; Petrov, Yu. N.; Borimskaya, S. T.

TITLE: The kinetics of the heterogeneous disintegration of a supersaturated solid solution of beryllium in nickel

SOURCE: Fizika metallov i metallovedeniye, v. 18, no. 3, 1964, 385-388

TOPIC TAGS: beryllium, nickel, heterogeneous disintegration, homogeneous disintegration, kinetics, cell growth

ABSTRACT: Based on the results of other authors, the kinetics of the heterogeneous disintegration of a supersaturated solid solution in an Ni alloy with 1.92 Wt% Be prepared in an induction furnace were investigated. Optical analysis and an electron microscope were applied. The kinetics of the heterogeneous disintegration were plotted in a diagram according to the equation:

$$x_{transform.} = 1 - exp\left[-b_s^{-\frac{1}{3}}f_s(a_s)\right]$$

Card 1/2

L 24849-65

ACCESSION NR: AP4046090

2

Disintegration is controlled by the diffusion of the atoms of the alloying elements that are contained in the precipitating phase. The evaluation of the linear rate of growth of eutectoid-type cells which are composed of alternate lamina of the precipitating phase and the depleted matrix was carried out with a view to the effect of the length of isothermal annealing on the maximum size of the cells in the direction of their growth. At the initial stage, the heterogeneous disintegration is accompanied by homogeneous disintegration contrary to the processes in other alloys where the heterogenous disintegration sets in 50 hours after the beginning of annealing at 800C. All experimental data coincided with the work of other authors. The contribution of N. N. Buynov is acknowledged. Orig. art. has: 3 figures., 6 equations, and 1 table

ASSOCIATION: Institut metallofiziki, AN USSR (Institute of Metal Physics, AN USSR)

SUBMITTED: 16Oct63   ENCL: 00

SUB CODE: MM   NO REF SOV: 009   OTHER: 012

Card 2/2

L 60892-65   EWT(m)/EWP(i)/EWP(t)/EWP(b)/EWA(h)   JD
ACCESSION NR: AR5018415   UR/0081/65/000/011/L040/L040

SOURCE: Ref. zh. Khimiya, Abs. 11L292

AUTHOR: Petrov, Yu. N.; Zaydman, G. N.; Idisis, L. S.; Parshutin, V. V.

TITLE: The effect of ultrasonic vibrations on the yield and hardness of electro-
lytic coatings employed in repair work

CITED SOURCE: Tr. Kishinevsk. s.-kh. in-ta, v. 33, no. 2, 1964, 69-77

TOPIC TAGS: ultrasonic vibration, plating, nickel plating, chromium plating, iron
plating

TRANSLATION: The effect of ultrasonic vibrations on the yield of the processes of
nickel plating, iron plating, and chromium plating and also on the hardness of
electrolytic Ni, Fe, and Cr precipitates is studied. It is noted that under the ac-
tion of ultrasound galvanic coatings can be obtained at large values of D_k with
higher viscous flows. The effect of ultrasound is most noticeable in the case of
nickel plating. The hardness of the precipitates which are obtained increases under
the action of ultrasound by approximately twice and reaches the hardness of Cr-

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ACCESSION NR: AR5018415

coatings obtained from universal baths; this makes it possible to employ nickel plating, iron plating, and chromium plating for restoring worn parts. The authors explain such an effect of ultrasound by the mixing action of the ultrasonic field and the effect of cavitation on the removal of the colloidal films. The increase in the hardness of the coatings in the ultrasonic field is explained by an increase of distortions of the third order. L. Lubneva

SUB CODE: GP, IE   ENCL: 00

Card 2/2

L 2997-66   EWT(m)/EPF(c)/EWP(j)/ETC(m)   WW/DJ/RM

ACCESSION NR: AR5012169   UR/0282/65/000/003/0061/0061
                                           678.655.066.621.822.5

SOURCE: Ref. zh. Khimicheskoy i kholodil'noye mashinostroyeniye. Otdel'nyy
vypusk, Abs. 3.47.422

AUTHOR: Petrov, Yu. N.; Fedorovich, P. T.

TITLE: On the problem of optimal distribution of polycaprolactam resin coatings on
the shaft and bearing couple

CITED SOURCE: Tr. Kishinevsk. s.-kh. in-ta, v. 33, no. 2, 1964, 78-85

TOPIC TAGS: specialized coating, protective coating, resin, antifriction bearing,
high temperature coating

TRANSLATION: Results of optimal distribution of capronic coatings on a shaft-bear-
ing couple are briefly described. The expediency of coating the bearing insert but
not the shaft with antifriction material is generally questioned. Physical wear of
the metallic polymer couple has not been studied extensively and further research
is required. The study concludes that using a thin-layered capronic coating on the
reversed couple of the bearing allows one to improve the removal of frictional heat,

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ACCESSION NR: AR5012169

to decrease the growth of junction clearance more than twice as much as in the form-
er coupling, and also to exclude the possibility of disturbing the fluidity of
friction due to deformations of the geometric form of the stationary part of the
coupling. The employment of the metallic-polymeric frictional coupling in reverse
order in production maintenance makes possible a boost in service life of a machine
part. 8 illustrations, 8 references. N. Solov'ev.

SUB CODE: MT, IE   ENCL: 00

Card 2/2

PETROV, Yu.N.; MATVEEV, A.K.

A 75 H laser. Prl. v nel. Zhur. eksper. i teor. fiz. 1 no..: 30-41 Ag '65.   (MIRA 18:9)

1. Fizicheskiy institut imeni P.N.Lebedeva AN SSSR.

N., kand. tekhn. nauk; MOROZOV, V.A., inzh.

f ... a choke coil for pulsation-arc hard facing.
..., proizv. ...IC:29-32 O '65.   (MIRA 18.

.. Kishinevskiy sel'skokhozyaystvennyy institut im. M.V. Frun.,
.. len korrespondent AN Moldavskoy SSR (for Petrov).

GRIDNEV, V.N. [Hridniev, V.N.]; PETROV, Yu.N. [Petrov, IU.M.]

Structure of high-carbon martensite on data of electron microscopy
and microelectron diffraction study. Ukr. fiz. zhur. 10 no.6:662-
667 Je '65.   (MIRA 18:7)

1. Institut metallofiziki AN Ukr.SSR, Kiyev.

GRIDNEV, V.N.

PETROV, Yu.N.

Introducing automatic machines for undercutting faces of solid
semiconductors. Biul. tekh.-ekon. inform. Gos. nauch.-issl. inst.
nauch. i tekh. inform. 18 no.7:32-34 Jl '65.   (MIRA 18:9)

ACC NR: AP7003613   SOURCE CODE: UR/0185/66/011/012/1338/1340

AUTHOR: L'vov, H. K.—L'vov, G. K.; Petrov, Yu. N.; Yaremchuk, V. V.

ORG: none

TITLE: The dislocation structure changes originating with rapid heating of low-carbon steel

SOURCE: Ukrayins'kyy fizychnyy zhurnal, v. 11, no. 12, 1966, 1338-1340

TOPIC TAGS: low carbon steel, CRYSTAL dislocation, RECRYSTALLIZATION, heating, /08Kp, steel LOW CARBON

ABSTRACT: Specimens, 0.28 x 21 x 65 mm, of low-carbon 08kp steel cold rolled with a 61% reduction were heating at a rate of 880 C/sec to a near-recrystallization temperature and then cooled at a rate of 1000 C/sec, or slowly heated at a rate of 0.13 C/sec to the same temperature and quenched. Test specimens, 3 mm in diameter and less than 0.11 mm thick, were investigated for the dislocation structure changes originated with rapid and slow heating of the steel. The as-rolled steel structure consisted of grain fragments with a complex system of intertwined dislocations. Rapidly — heated steel had a similar structure. The structure of slowly heated steel contained light-colored regions with a relatively small number of dislocations. With slow heating to a temperature higher than that of recrystallization, the steel structure —

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ACC NR: AP7003613

resembed the structure of the annealed steel, regardless of the cooling rate.
The steel specimens, rapidly heated to temperatures which ensured complete recrystal-
lization and then cooled in water or slowly cooled in air, had an identical structure.
The results showed that the dislocation structure of completely recrystallized
08kp steel does not depend on the rate of heating for recrystallization and is free
from the defects originating from previous cold working. Orig. art. has: 4 figures.

SUB CODE: 11/ SUBM DATE: 14Apr66/ ORIG REF: 004

Card 2/2

ACC NR: AP6028718   SOURCE CODE: UR/0122/66/000/008/0050/0052

AUTHORS: Petrov, Yu. N. (Doctor of technical sciences, Professor); Nud'ga, V. N. (Engineer)

ORG: none

TITLE: Increasing the chrome plating productivity and improving plating properties by use of ultrasonic vibrations

SOURCE: Vestnik mashinostroyeniya, no. 8, 1966, 50-52

TOPIC TAGS: chromium plating, metal plating, ultrasonic generator, magnetostrictive transducer, ultrasonic vibration/ UZG-10U ultrasonic generator, PMS-6 magnetostrictive transducer

ABSTRACT: The effects of ultrasonic vibrations on chrome plating productivity and in plating properties were investigated in a special electrolytic bath (Yu. N. Petrov and G. N. Zaydman. Sb. nauchno-issledovatel'skikh rabot aspirantov. Kishinevskiy sel'skokhozyaystvennyy institut. Kishinev. 1964) driven by a UZG-10U generator through a PMS-6 magnetostrictive transducer. Field intensities of 0.1--1.5 watt/cm² were applied to universal electrolytes (100--400 g/liter CrO₃, 2--6 g/liter H₂SO₄, t = 20--100C), and tetrachromatic electrolytes (100--600 g/liter CrO₃, 1--10 H₂SO₄, 0--100 NaOH, 0--12 sugar, t = 20--40C). Yield, hardness, and internal stresses of the

UDC: 669.268.7

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ACC NR: AP6028718

plating were measured. It was found that an intensity of 1.15--1.25 wt/cm² was required to obtain significant improvements. The results are presented in Fig. 1 as a function of current density for the optimum solution compositions and temperatures.

Fig. 1. Effects of cathode current density D_k on the chromium yield η_{cr} (solid) and on the plating rate v micron/hr (dotted lines) in an electrolyte of 400 g/liter CrO_3, 2 g/liter H_2SO_4, 50 g/liter NaOH, 2 g/liter sugar at t = 20°C (1 - with ultrasonic field, 2 - without) and in an electrolyte of 250 g/liter CrO_3, 2.5 H_2SO_4 at t = 55°C (3 - with, 4 - without ultrasonic field)
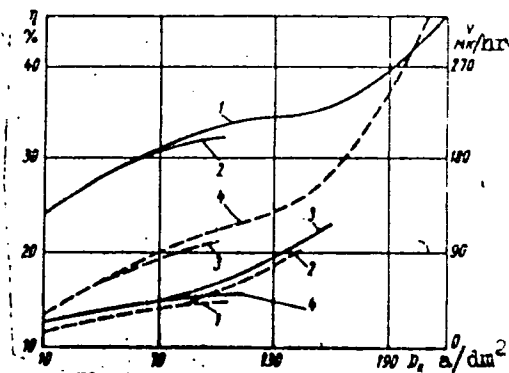
Orig. art. has: 5 figures.

SUB CODE: 11, 13/ SUBM DATE: none/ ORIG REF: 001

Cord 2/2

L 43093-66   EWT(m)/T/EWP(t)/ETI   IJP(c)   JD/HB

ACC NR: AR6014384   (A,N)   SOURCE CODE: UR/0137/66/000/011/I057/I057

AUTHORS: Petrov, Yu. N.; Mamontov, Ye. A.; Parsadanyan, A. S.; Vyrlan, A. I.;
Stanko, A. A.; Kalmutskiy, V. S.

TITLE: Influence of thermal treatment on the electrode potential of steel

SOURCE: Ref. zh. Metallurgiya, Abs. 111396

REF SOURCE: Sb. Materialy dokl. 1-y Nauchno-tekhn. konferentsii Kishinevsk.
politekhn. in-ta k Kishinev, 1965, 86-87

TOPIC TAGS: steel, carbon steel, electrode potential / St 45 steel

ABSTRACT: On the basis of comparison of the magnitude of stationary potentials
of quenched and nonquenched specimens in a working electrolyte of iron-plating
solution and 30% sulfuric acid solution, it is concluded that potentials of the
quenched specimens are more positive than those of the nonquenched specimens.
The behavior of specimens (St 45 quenched) during anodic treatment in 30% sul-
furic acid solution shows that the more intensive passivation occurs for quenched
specimens. The change of the stationary potentials of quenched carbon steel
towards electropositive values is explained by the presence of residual

Card 1/2   UDC: 669.14.018.26:621.78

L 43093-66

ACC NR: AR6014384   C

austenite., Experience in the application of the iron-plating process shows
that obtaining a strong durable surface on quenched parts is associated with
greater difficulties as compared with nonquenched parts. I. Tulupova /Trans-
lation of abstract/

SUB CODE: 11

Card 2/2

L 27336-66   EWT(d)/EWT(m)/EWP(w)/EWA(d)/EWP(j)/I/EWP(t)/EWP(l)   IJP(c)   JD/DJ/

ACC NR: AT6008955 GS/RM (A)   SOURCE CODE: UR/0000/65/000/000/0156/0161

AUTHORS: Petrov, Yu. N.; Fedorovich, P. T.

ORG: none

TITLE: Investigation of the wear resistance of caprone coatings in normal and reversed friction couples during machine repair

SOURCE: Moscow. Institut mashinovedeniya. Plastmassy v podshipnikakh skol'zheniya; issledovaniya, opyt primeneniya (Plastics in friction bearings; research and experiment in application). Moscow, Izd-vo Nauka, 1965, 156-161

TOPIC TAGS: antifriction material, caprone, steel, oil, microscope, babbit, bearing material / MI-1M friction machine, Dp-11 oil, UIM-21 microscope, BN-3 babbit, 45 steel

ABSTRACT: The geometry of wear of normal (steel shaft-caprone bearing) and reversed (caprone-coated shaft-steel bearing) friction couples was considered, and wear experiments with steel 45 and caprone coatings (0.25-mm thick) were performed on friction machine MI-1M. Preliminary experiments showed that addition of 8% graphite and boiling of caprone at 180C in oil Dp-11 for 15 minutes

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ACC NR: AT6008955

improved its wear characteristics. These characteristics were measured as a
function of time for normal and reversed couples at 50 kg/cm^2 load and 0.92
m/sec with Dp-11 oil lubrication. It was found that the linear wear resistance
of caprone in the reversed couple was almost three times better than in the
normal couple, although the wear by weight was about four times greater. The
wear characteristics of the two types of couples were also measured as a function
of load (15—150 kg) and speed (0.63, 0.92, 1.55, and 2.1 m/sec), and experi-
mental curves and a comparative table are presented (babbit BN-3 behavior is
included also). Orig. art. has: 6 figures, 1 table, and 8 formulas.

SUB CODE:11, 13/SUBM DATE: 31Jul65

Card 2/2

PETROV, Yu.N.; DEBHTYAR', I.I.; NUD'GA, V N.

Power method for the determination of residual stresses in
electrolytic coatings obtained in the ultrasonic field.
Elektrokhimiia 2 no.1:109-112 Ja '66.   (MIRA 19:)

1. Kishinevskiy sel'skokhozyaystvennyy institut imeni M. V. Frunze.
Submitted May 20, 1965.

ACC NR: AP6026320 (A) SOURCE CODE: UR/0407/65/000/003/0045/0049

AUTHOR: Petrov, Yu. N. (Kishinev); Dekhtyar', L. I. (Kishinev);
Safronov, I. I. (Kishinev); Beznosov, A. Ya. (Kishinev)

ORG: none

TITLE: Effect of working conditions of mechanized electrospark hardening on the
resulting surface quality

SOURCE: Elektronnaya obrabotka materialov, no. 3, 1965, 45-49

TOPIC TAGS: electrospark hardening, steel, surface hardening

ABSTRACT: The results are reported of an experimental study of the effect of
electrode-feed rate, work-piece rpm, number of passes, and electric system
parameters upon the hardness and roughness of surface and work-piece size
variation. In the experimental machine (see figure), piece 1 held by centers 2 is
driven by d-c motor 4 through reducer 3. Electromagnetic vibrator 5 is axially
moved by lead screw 6 driven by wormgear 7 and d-c motor 8. The work-piece

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ACC NR: AP6026320

rpms are controlled by potentiometer 10. The vibrator travel is reversed by switch 11. Generator 12 and capacitor bank 13 supply the discharge circuit. Cylindrical pieces made from normalized steel-45 were experimentally hardened by T15K6 electrodes. It was found that: (1) The number of passes (1—4) and the working current (2.5—10 amp) have the greatest effect on the surface hardness and piece-size augmentation; the piece rpm and electrode-feed rate have a relatively small influence; (2) The surface roughness only very slightly depends on the above factors. Orig. art. has: 6 figures.

SUB CODE: 13, 14 / SUBM DATE: none / ORIG REF: 007

Card 2/2

PETROV, Yu.P. (Leningrad)

Use of the "maximum principle" in determining the law of optimum
regulation of synchronous machines. Elektrichestvo no.10:
37-38 O '64.   (MIRA 17:12)