24(2)
AUTHORS: Garber, R. I., Kogan, V. S., Polyakov, L. M.   SOV/56-35-6-7/44

TITLE: The Growth and the Dissolution of Pores in Crystals
             (Rost i rastvoreniye por v kristallakh)

ABSTRACT: In the present paper the authors describe the experimental
             determination of the time-dependence of diffusion processes of
             sintering and of pore coalescence in rock salt. The results obtain-
             ed agree well with the theoretical formulae by I.M. Lifshits and
             V.V. Sledov (Ref 1): $\overline{R^3}=(4/9)\cdot D_v\alpha\tau$, $\xi(\tau) = 2(D_v\alpha\tau)^{1/3}/Q_0^{1/2}$ and
             $\alpha = \sigma V c_0/kT$ (D_v = diffusion coefficient of vacancies, τ = duration
             of sintering, Q_0 = total initial oversaturation, σ = surface tension,
             V = the volume of a vacancy, c_0 = vacancy concentration; the first
             equation describes the law of pore growth, the second the time-
             dependence of the zone breadth ξ in which the pores dissolve).
             The authors numerically determined a number of parameters
             characterizing diffusion in rock salt, as e.g. the diffusion

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The Growth and the Dissolution of Pores in Crystals   SOV/56-35-6-7/44

coefficient $D(T)$, T in ${}^\circ K$:

T	C
693	$7.9 \cdot 10^{-10}$
773	$3.1 \cdot 10^{-9}$
923	$1.6 \cdot 10^{-8}$
1023	$0.7 \cdot 10^{-7}$

further, the time-dependence of the breadth of the sintering zone for 500 and 650°C (Fig 4), the dependence of pore dimension on sintering of long duration ($t = 500°C$) (Fig 5), $\ln(\quad / \quad)$ as a function of $\ln$ (Fig 6), etc. Attached to this article are very good photographs of salt-, iron-, and magnesium single crystals, of pores and salt crystal bridges in various degrees of enlargement, at various sintering temperatures, and various durations of sintering (up to 60 hours). It is shown that sintering phenomena develop not only as a result of the dissolution of pores and the direct exit of the vacancies on the free surface, but also via an intermediate stage in which the vacancies accumulate on macrodefects with subsequent formation of large negative crystals on the latter. Coalescence of pores was observed in the annealing of single crystals of metallic samples, the preparation method of which (vacuum distillation etc.) is made responsible for the initial porosity. Thus, the vacuum treatment of iron crystal took 42 hours at 1000°C (Fig 11), that of the Mg single crystal 60 hours at 400-420°C. In conclusion

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The Growth and the Dissolution of Pores in Crystals   SOV/56-35-6-7/44

ASSOCIATION: Fiziko-tekhnicheskiy institut Akademii nauk Ukrainskoy SSR
(Physico-Technical Institute of the Academy of Sciences,
Ukrainskaya SSR)

SUBMITTED: June 17, 1958

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24(2)
AUTHORS: Garber, R. I., Polyakov, L. M.   SOV/56-36-6-3/66

TITLE: Investigation of the Initial Stages of the Plastic Deformation
                  of Rock Salt Crystals (Issledovaniye nachal'nykh stadiy plasti-
                  cheskoy deformatsii kristallov kamennoy soli)

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1959,
                  Vol 36, Nr 6, pp 1625 - 1630 (USSR)

ABSTRACT: The authors give a report on investigations of deformation
                  processes in rock salt in the case of the formation of ele-
                  mentary displacements constituting a special deformation state
                  (further deformation leads to the formation of individual gliding
                  bands). The following stages are distinguished: Elastic defor-
                  mation ($\sigma < 70$); elementary displacement ($\sigma \approx 70$); occurrence of
                  single gliding bands ($\sigma \approx 100$); packets of gliding bands ($\sigma > 100$);
                  isotropic light scatter (Tyndall cone) ($\sigma > 120$); asterism ($\sigma > 600$);
                  destruction ($\sigma > 2000$). The σ-values give the normal tension in
                  g/mm^2. The activation energy required for annealing the residual
                  stresses in elementary displacements is twice as small as that of the
                  splitting bands. Additional attenuation of light was detected near the

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Investigation of the Initial Stages of the Plastic   SOV/56-36-6-3/66
Deformation of Rock Salt Crystals

traces of the elementary displacements. It is suggested that
this is due to the effect of the line inhomogeneities which
are differently orientated on both sides of each trace. Some
traces of elementary displacements have been found to contract
after the load is removed as in the case of elastic twins of
sodium salpeter. The trace of the elementary displacement on
the lateral surface of the crystal was found to have a smooth
profile extending over 1500 Å. This smooth profile can be
satisfactorily explained by the effect of the surface tension
forces which are in thermodynamic equilibrium with the additional
residual stresses. The figures partly show very good photographs
of elementary displacements. Figure 1 shows the photograph of
a crystal with incomplete traces of an elementary displacement
with respect to the (110)-plane, which was taken by means of a
polarization microscope (25-fold enlargement); compression
tension along the (010)-axis $70g/mm^2$; figure 2 shows an electron-
microscopic picture (25000-fold) of a disturbed elementary
displacement; figures 3 and 4 show photographs of elementary
displacements (also 25 times enlarged), and figure 6 is a very
good reproduction of disturbed interference strips; figure 7

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is an electron-microscopic picture. The authors finally thank
V. K. Sklyarov and I. M. Fishman for assisting in carrying out
the experiments. There are 8 figures and 10 references, 8
of which are Soviet.

ASSOCIATION: Fiziko-tekhnicheskiy institut Akademii nauk Ukrainskoy SSR
(Physico-technical Institute of the Academy of Sciences, Ukrains-
kaya SSR)

SUBMITTED: December 20, 1958

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GARBER, R. I.; POLYAKOV, L. M.

Investigating sub-microscopic nonuniformities of rock salt after
plastic deformation. Fiz. tver. tela 2 no.5:974-981 My '60.
(MIRA 13:10)

1. Fiziko-tekhnicheskiy institut AN USSR, Khar'kov.
         (Salt)   (Deformations (Mechanics))

81620
S/181/60/002/06/08/050
B122/B063

/8.8200

AUTHORS: Garber, R. I., Gindin, I. A., Polyakov, L. M.

TITLE: Dispersion and Re-establishment of Contacts Between Micro-
blocks During Plastic Deformation

PERIODICAL   Fizika tverdogo tela, 1960, Vol. 2, No. 6, pp. 1089 - 1095

TEXT: The low strength of solid bodies after deformation is ascribed to
dislocations, fractures, and microcracks and the resulting concentration
of strains which attain the value of theoretical strength in microregions.
Furthermore, the formation, splitting, and disorientation of microblocks are
observable. The concentration of strains may be regarded as an increase in
latent energy which is due to the extension of the inner surface brought
about by disorientation. The surface energy of the liberated parts of the
block surfaces would pass over into latent energy. The block dimensions
themselves have a specific value for every material. According to B. M. Ro-
vinskiy and L. M. Rybakova (Ref. 7), this value constitutes a mean value of
split and restored blocks. In this connection, the saturation of the latent
deformation energy corresponds to the stabilization of the mean block

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Dispersion and Re-establishment of Contacts   S/181/60/002/06/08/050
Between Microblocks During Plastic Deformation   B122/B063

dimensions. The surface energy is determined by formula: $\gamma = \frac{\alpha}{\beta} \frac{1 \rho Q}{\sigma}$ (1), where $\alpha = v/l^3$, v denotes the volume of the block, l its length, $\beta = S/l^2$, S is the surface, ρ is the material density, Q is the latent energy of plastic deformation on saturation referred to the sample mass, and σ is the mean surface tension. As an example, γ has the value 0.5 for copper, i.e., on plastic deformation of copper a considerable part of the block surfaces is without contact with the neighboring blocks. It is then consi- dered that a part of the latent deformation energies must be also ascribed to other causes, such as lattice defects, dislocations, and residual stres- ses. The latter are determined in metals roentgenographically, and do not amount to more than 2 % of Q. Atomic dispersion and imperfections, de- termined from the change of resistivity as a result of plastic deformation, correspond to only 5 % of the latent energy Q. Thus, almost the entire latent energy of the plastic deformation was found to be present as the energy of the free block surfaces. The process of contact re-establishment was studied on pressed and high-vacuum heated copper disks, on the change of the flow velocity of hydrogen through iron tubes, which were deformed at the temper- atures of liquid nitrogen, and finally, on the change, caused by annealing,

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GARBER, R.I.; POLYAKOV, L.M.

Distribution of residual stresses in plastically deformed rock salt crystals. Fiz. met. i metalloved. 10 no.3:462-471 S '60.
(MIRA 13:10)

1. Fiziko-tekhnicheskiy institut AN USSR.
   (Rock salt)   (Dislocations in crystals)

85044

I.2310   2308, 2708 only

S/126/60/010/004/014/023
E021/E406

AUTHORS: Garber, R.I., Polyakov, L.M. and Malik, G.N.

TITLE: Welding of Copper by Exposure to Sonic Vibrations

PERIODICAL: Fizika metallov i metallovedeniye, 1960, Vol.10, No.4,
pp.590-596

TEXT: Investigations were carried out using an oscillator,
a magnetostriction device, an arrangement for loading and a vacuum
chamber.   The apparatus is shown in Fig.1.   The specimens were
simultaneously loaded with static and dynamic pressures.   The
experiments were carried out in a vacuum of 10^{-5} mm mercury.   The
influence of the applied pressure, the temperature, the time and
regime of vibrations on the strength of the joint were investigated.
The samples were heated by a molybdenum heater and shields of thin
sheets of stainless steel.   The samples were prepared from
oxygen-free copper in the form of a disc, 16 mm in diameter and
10 mm high (Fig.2).   The strength of the joints was tested on an
ИМ-4Р (IM-4R) machine.   The optimum time of exposure to sonic
vibrations in order to produce the strongest joint is 20 to
30 seconds at 825°C and a pressure of 1.5 kg/mm² (curve 1, Fig.3)
and 2 to 3 minutes at 700°C and a pressure of 2.5 kg/mm² (curve 1,

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Welding of Copper by Exposure to Sonic Vibrations

Fig.4). The curves were obtained after a ten minute heat treatment after the sonic treatment at the same temperature. Curves 2 in Figs.3 and 4 show the strength of joint without the sonic vibrations. To obtain joints of similar strength to those obtained with vibrations, the pressure has to be maintained for one hour at 825°C or three hours at 700°C without the application of vibrations. Thus the time is considerably reduced by the use of the vibrations. Fig.6 shows the microstructure of a specimen after 4 minutes application of vibrations at 600°C (the optimum time for this temperature). The grain size is 3 to 4 times smaller than that of the original material. The strength of this sample was 19 kg/mm^2. After 20 minutes vibration, the grain size becomes coarser and cracks begin to develop (Figs.7,8). The strength fell to 14 to 15 kg/mm^2. Fig.9 shows a sample after 10 minutes vibration at 825°C. Cracks have developed in the grain boundaries of the coarse grains. Fig.10 shows the relation between the strength of the joint and static pressure at 600°C, Curve 1 is after 4 minutes vibration treatment, curve 2 after 10 minutes and curve 3 after 3 minutes treatment without vibrations. It can be

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Welding of Copper by Exposure to Sonic Vibrations

seen that with vibrations the static pressure can be considerably
reduced to obtain the same strength.   The use of vibrations also
enables joints to be obtained with low values of plastic deformation
of the samples.   There are 11 figures and 8 references: 6 Soviet,
1 German and 1 English.

ASSOCIATION: Fiziko-tekhnicheskiy institut AN USSR
             (Physics and Engineering Institute AS UkrSSR)

SUBMITTED: February 29, 1960

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20129
$S/181/61/003/002/027/050$
$B102/B212$

24.7500 $1035, 1158 1160$

AUTHORS: Geguzin, Ya. Ye. and Polyakov, L. M.

TITLE: Investigations in the field of crystal ceramics. II. The effect of a uniform pressure on the healing kinetics of macro-defects in ion crystals

PERIODICAL: Fizika tverdogo tela, v. 3, no. 2, 1961, 520-527

TEXT: The present paper is a continuation of Ref. 13 (Geguzin and V. I. X Startsev, Kristallografiya, 5, 2, 1960) and brings results of an experimental and theoretical investigation which has been performed to study the influence of uniform pressure on the healing of defects (coalescence of pores and micro-cracks) occurring during plastic deformation of NaCl-crystals. Samples measuring 5 · 6 · 15 mm (natural rock salt) have been heated to 650°C for two days and after that cooled down slowly. Samples without any defects have been selected for the test. In order to produce micro-defects (of one magnitude smaller than the wavelength of visible light) in these samples they have been deformed with an exponentially increasing load. An increase of light scattering could be observed

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during the deformation process. The mean loads applied (σ) varied be-
tween 1250 and 1350 g/mm^2. Then, the deformed samples have been exposed
to heat treatment in an autoclave (60 cm^3) under uniform pressure (argon).
After this, the light scattering has been studied at room temperature
using an ultramicroscope. Several test series have been performed, in
order to obtain useful results (isothermal treatment at 400, 500, 600,
and 700°C at 1-50 atm, during τ = 30 min). The results are shown in
Fig. 1:   i = $(i_o-i_b)/(i_n-i_b)$ as function of pressure at four different
temperatures; where i_o is the intensity of the light scattered in the
crystal, i_n is that after crystal deformation, i_b is the intensity of
the background. The time dependence (τ) of the light transmittance of a
crystal at p = const, T = const (500°C, 1, 30, and 70 atm) has been
investigated in another test series. The results are shown in Fig. 2.
The temperature dependence i(t) at a constant heating rate (10°/min)
has been studied also for 1 and 30 atm. At 100°C a noticeable healing
process can be observed. The results may be interpreted in terms of the
diffusion theory. At given test conditions and a given value of the
relative supersaturation of a crystal having the vacancies $(\Delta \xi/\xi)$ there

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is a critical defect dimension r^*, at which defects larger than r^+
coagulate at the expense of those smaller than r^+. r^+ is given by
$r^* = \{2\sigma\Omega/\Delta\}kT$, where Ω is the crystal volume per atom. It can be
expected that a uniform pressure promotes this coalescence, i.e., heals
small pores. The excess vacancy concentration $\Delta\int_r^p$ near the surface of a
pore with a radius r (under the influence of pressure p) is given by
$\Delta\int_r^p = \int_r - \int^p$, where $\int_r$ is the vacancy concentration near the pore
surface, $\int^p$ that far from the pore. These two concentrations are de-
termined by $\int_r = \int_o (1 + \frac{2\sigma}{r} \frac{\Omega}{kT})$, $\int^p = \int_o \exp(-p\Omega/kT)$. The change of
$\Delta\int_r$, if a pressure is applied, may also be expressed by the change of the
pore radius (r is substituted by $\tilde{r}$): $\frac{2\sigma}{\tilde{r}} \frac{\Omega}{kT} = 1 + \frac{2\sigma}{r} \frac{\Omega}{kT} - \exp(-p\Omega/kT)$.
For $p\Omega/kT < 1$, $\tilde{r} = r/(1 + \alpha p)$, where $\alpha = r/2\sigma$; analogously, the following
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expression is valid for the critical dimensions if pressure is applied:
$r^* = r_o^*/(1-\beta p)$, where $\beta = r^*/2\sigma$. It is shown that experiments can be well
described with these formulas. The experiments also show that under
otherwise equal conditions the same healing effects (observed via light
transmittance) may be obtained by either raising the temperature or the
pressure. I. M. Lifshits and V. V. Slezov are mentioned. There are
4 figures and 13 references: 12 Soviet-bloc.

ASSOCIATION: Khar'kovskiy filial IRYeA Fiziko-tekhnicheskiy institut
               AN SSSR Khar'kov (Khar'kov Branch of IRYeA, Institute
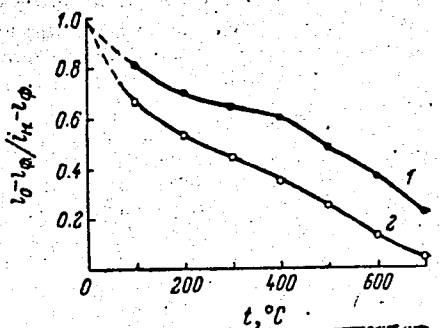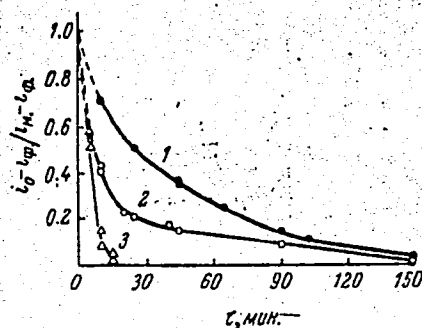   of Physical Technology AS USSR, Khar'kov)

SUBMITTED: May 30, 1960

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20129

Investigations in the field...

S/181/61/003/002/027/050
B102/B212

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I.2300 also 1533

22964
S/126/61/011/005/009/015
E193/E183

AUTHORS: Garber, R.I., and Polyakov, L.M.

TITLE: Investigation of the process of sintering metals.
             II.

PERIODICAL: Fizika metallov i metallovedeniya, Vol.11, No.5, 1961,
             pp. 730-740.

TEXT: Part I of this paper was published in the Ukr.Fiz.Zh.,
1956, Vol.1, 88.
The process studied by the present authors consisted in butt-
joining two flat, ring-shaped aluminium specimens by simultaneous
application of heat and pressure and constituted, in fact, pressure
welding. The object of the present investigation was to study the
relationship between the strength of joints, produced by this
method, and the pressure employed, temperature, and duration of the
process. In addition, the variation of the microstructure near the
joint interface was studied, and the temperature dependence of
hardness of aluminium was determined. To minimise the effect of
oxide films and gases absorbed on the metal surface, all
experiments were carried out in vacuum of 10^{-5} to 10^{-6} mm Hg.
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22965

S/126/61/011/005/009/015
E193/E183

Investigation of the process of sintering metals.   II.

Immediately before each experiment, the surfaces to be joined were cleaned with a steel brush after which the surface roughness was 0.5-1.5 μ.   The two rings were then assembled in a specially designed press, the whole was placed in the vacuum changer, the temperature of the aluminium rings was raised to 600 °C and kept constant for 15-20 minutes, after which they were cooled to the test temperature and the appropriate load applied.   The strength of the joint was determined on a tensile testing machine.   The results are reproduced graphically.   In Fig. 4, U.T.S. (σ_p, kg/mm^2) of the joint obtained under pressure   p = 0.32 kg/mm^2, is plotted against the sintering time (τ, minutes), curves 1-4 relating to sintering at 450, 500, 550 and 600 °C respectively.   A similar set of curves, constructed for joints obtained under   p = 2 kg/mm^2, is reproduced in Fig. 5.   In Fig. 6, σ_p is plotted against   p (kg/mm^2), curves 1-6 relating to joints obtained at 300, 400, 450, 500, 550 and 600 °C respectively.   It was inferred from these results that the process studied takes place in two stages.   The first stage consists in the formation of metallic bond between the

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E193/E183

Investigation pf the process of sintering metals. II.

clean surfaces brought into intimate contact by the action of the
applied pressure. The strength of the resultant joint is deter-
mined mainly by the conditions obtaining during this initial stage.
It is pointed out here that for the joint to be formed, it is not
only necessary to bring the two mating surfaces within a distance
equal to the lattice parameter of the metal, but a re-grouping of
the atoms has also to take place in order to create conditions
favourable for the formation of the metallic bond. The activation
energy for the re-grouping of atoms in aluminium has been found to
be 6.4 kcal/mol.   In the second stage of the process, in which
diffusion plays the predominant part, the areas of contact
established during the first stage increase as a result of:
(1) movement of vacancies to the boundaries of the welded regions;
(2) coalescence of the excess vacancies and formation of large
pores due to dissolution of small pores; and (3) dissolution of
large pores. The effect of the second stage of the process on the
strength of the resultant joints becomes significant only at high
temperatures and after a prolonged sintering.
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22964
S/126/61/011/005/009/015
Investigation of the process of E193/E183

There are 10 figures and 16 references: 8 Soviet and 8 non-Soviet.
The English language reference reads:
Ref.7: G.J. Finch and R.T. Spurr. Physics of Lubrication,
         Supplement, 1951, No.1.

ASSOCIATION: Fiziko-tekhnicheskiy institut AN USSR g. Khar'kov
              (Physico-technical Institute, AS Ukr.SSR, Khar'kov).
SUBMITTED: August 15, 1960

Card 4/6

POLYAKOV, L. III

ANDON'YEV, V.L.; BAUM, V.A.; BAUMGARTEN, N.K.; BEREZIN, V.D.; BIRYUKOV, I.K.;
BIRYUKOV, S.M.; BLOKHIN, S.I.; BOROVOY, G.A.; BULEV, M.Z.; BURAKOV,
N.A.; VERTSAYZER, B.A.; VOVK, G.M.; VORMAN, B.A.; VOSHCHININ, A.P.;
GALAKTIONOV, V.D., kand. tekhn. nauk; GENKIN, Ye.M.; GIL'DENBLAT,
Ya.D., kand. tekhn. nauk; GINZBURG, M.M.; GLEBOV, P.S.; GODES, E.G.;
GORBACHEV, V.N.; GRZHIB, B.V.; GREKULOV, L.F., kand. s.-kh. nauk;
GRODZENSKAYA, I.Ya.; DANILOV, A.G.; DMITRIYEV, I.G.; DMITRIYENKO,
Yu.D.; DOBROKHOTOV, D.D.; DUBININ, L.G.; DUNDUKOV, M.D.; ZHOLIK,
A.P.; ZENKEVICH, D.K.; ZIMAREV, Ye.V.; ZIMASKOV, S.V.; ZUBRIK, K.M.;
KARANOV, I.F.; KNYAZEV, S.N.; KOLEGAYEV, N.M.; KOMAREVSKIY, V.T.;
KOSENKO, V.P.; KORENISTOV, D.V.; KOSTROV, I.N.; KOTLYARSKIY, D.M.;
KRIVSKIY, M.N.; KUZNETSOV, A.Ya.; LAGAR'KOV, N.I.; LGALOV, V.G.;
LIKHACHEV, V.P.; LOGUNOV, P.I.; MATSKEVICH, K.F.; MEL'NICHENKO,
K.I.; MENDELEVICH, I.R.; MIKHAYLOV, A.V., kand. tekhn. nauk;
MUSIYEVA, R.N.; NATANSON, A.V.; NIKITIN, M.V.; OVES, I.S.;
OGUL'NIK, G.R.; OSIPOV, A.D.; OSMER, N.A.; PETROV, V.I.; PERYSHKIN,
G.A., prof.; P'YANKOVA, Ye.V.; RAPOPORT, Ya.D.; REMEZOV, N.P.;
ROZANOV, M.P., kand. biol. nauk; ROCHEGOV, A.G.; RUBINCHIK, A.M.;
RYBCHEVSKIY, V.S.; SADCHIKOV, A.V.; SEMENTSOV, V.A.; SIDENKO, P.M.;
SINYAVSKAYA, V.T.; SITAROVA, M.N.; SOSNOVIKOV, K.S.; STAVITSKIY,
Ye.A.; STOLYAROV, B.P. [deceased]; SUDZILOVSKIY, A.O.; SYRTSOVA,
Ye.D., kand. tekhn. nauk; FILIPPSKIY, V.P.; KHALTURIN, A.D.;
TSISHEVSKIY, P.M.; CHERKASOV, M.I.; CHERNYSHEV, A.A.; CHUSOVITIN,
N.A.; SHESTOPAL, A.O.; SHEKHTER, P.A.; SHISHKO, G.A.; SHCHERBINA,
I.N.; ENGEL', F.F.; YAKOBSON, A.G.; YAKUBOV, P.A., ARKHANGEL'SKIY,
(Continued on next card)

ANDON'YEV, V.L.... (continued)   Card 2.
Ye.A., retsenzont, red.; AKHUTIN, A.N., retsenzent, red.; BALASHOV,
Yu.S., retsenzent, red.; BARABANOV, V.A., retsenzent, red.; BATUNER,
P.D., retsenzent, red.; BORODIN, P.V., kand. tekhn. nauk, retsenzent,
red.; VALUTSKIY, I.I., kand. tekhn. nauk, retsenzent, red.;
GRIGOR'YEV, V.M., kand. tekhn. nauk, retsenzent, red.; GUBIN, M.F.,
retsenzent, red.; GUDAYEV, I.N., retsenzent, red.; YERMOLOV, A.I.,
kand. tekhn. nauk, retsenzent, red.; KARAULOV, B.F., retsenzent,
red.; KRITSKIY, S.N., doktor tekhn. nauk, retsenzent, red.; LIKIN,
V.V., retsenzent, red.; LUKIN, V.V., retsenzent, red.; LUSKIN, Z.D.,
retsenzent, red.; MATRIROSOV, A.Kh., retsenzent, red.; MENDELEYEV,
D.M., retsenzent, red.; MENKEL', M.F., doktor tekhn. nauk, retsenzent,
red.; OBREZKOV, S.S., retsenzent, red.; PETRASHEN', P.N., retsenzent,
red.; POLYAKOV, L.M., retsenzent, red.; RUMYANTSEV, A.M., retsenzent,
red.; RYABCHIKOV, Ye.I., retsenzent, red.; STASENKOV, N.G., retsen-
zent, red.; TAKANAYEV, P.F., retsenzent, red.; TARANOVSKIY, S.V.,
prof., doktor tekhn. nauk, retsenzent, red.; TIZDEL', R.R., retsen-
zent, red.; FEDOROV, Ye.M., retsenzent, red.; SHEVYAKOV, M.N.,
retsenzent, red.; SHMAKOV, M.I., retsenzent, red.; ZHUK, S.Ya.
[deceased], akademik, glavnyy red.; VLASO, G.A., kand. tekhn. nauk,
red.; FILIMONOV, N.A., red.; VOLKOV, L.N., red.; GRISHIN, M.M., red.;
ZHURIN, V.D., prof., doktor tekhn. nauk, red.; KOSTROV, I.N., red.;
LIKHACHEV, V.P., red.; MEDVEDEV, V.M., kand. tekhn. nauk, red.;
MIKHAYLOV, A.V., kand. tekhn. nauk, red.; PETROV, G.D., red.; RAZIN,
N.V., red.; SOBOLEV, V.P., red.; FERINGER, B.P., red.; FREYGOFER,
                           (Continued on next card)

ANDON'YEV, V.L.... (continued)   Card 3.
    Ye.F., red.; TSYPLAKOV, V.D. [deceased], red.; KORABLINOV, P.N.,
    tekhn. red.; GENKIN, Ye.M., tekhn. red.; KACHEROVSKIY, N.V., tekhn.
    red.

    [Volga-Don; technical account of the construction of the V.I. Lenin
    Volga-Don Navigation Canal, the TSimlyansk Hydroelectric Center,
    and irrigation systems] Volgo-Don; tekhnicheskii otchet o stroitel'-
    stve Volgo-Donskogo sudokhodnogo kanala imeni V.I. Lenina, TSim-
    lianskogo gidrouzla i orositel'nykh sooruzhenii, 1949-1952; v piati
    tomakh. Moskva, Gos. energ. izd-vo. Vol.1. [General structural
    descriptions] Obshchee opisanie sooruzhenii. Glav. red. S.IA. Zhuk.
    Red. toma M.M. Grishin. 1957. 319 p. Vol.2. [Organization of con-
    struction. Specialized operations in hydraulic engineering] Orga-
    nizatsiia stroitel'stva. Spetsial'nye gidrotekhnicheskie raboty.
                                    (Continued on next card)

ANDON'YEV, V.L.... (continued)   Card 4.
Glav. red. S. IA. Zhuk. Red. toma I.N. Kostrov. 1958. 319 p.
(MIRA 11:9)
1. Russia (1923-   · U.S.S.R.) Ministerstvo elektrostantsii. Byuro tekhnicheskogo otcheta o stroitel'stve Volgo-Dona. 2. Chlen-korrespondent Akademii nauk SSSR (for Akhutin). 3. Deystvitel'nyy chlen Akademii stroitel'stva i arkhitektury SSSR (for Grishin, Razin).
(Volga Don Canal—Hydraulic engineering)

B/181/62/004/003/037/045
B108/B104

24,7500

AUTHORS: Kan, Ya. S., and Polyakov, L. M.

TITLE: Method of determining the tangential stresses in a medium
                under high pressure

PERIODICAL: Fizika tverdogo tela, v. 4, no. 3, 1962, 810-811

TEXT: A method of determining tangential stresses in a solid compressed
by solids is described. It is based on determining these stresses for
standard single crystals which at relatively low tangential stress show
traces of residual deformation. From the stress - strain diagrams of the
standards compressed under hydrostatic conditions one can then find the
tangential stresses in any specific case by determining the difference
between the hydrostatic traces and those obtained by compression between
solids. By this method it is also possible to determine the solidifica-
tion point of a liquid. There are 1 figure and 1 table. The English-
language references are: J. T. Stevart. Phys. Rev., 97, 578, 1955; C. A.
Swenson. Phys. Rev., 99, 423, 1955.

Card 1/2

1. POLYAKOV, L. M.; BORETSKIY, A. B., Arch.

2. USSR (600)

4. Hotels, Taverns, etc.--Moscow

7. 17-story hotel building on Kalanchevskaia Street. Gor.khoz.Mosk. 23 no. 7 1949.

9. Monthly List of Russian Accessions, Library of Congress, _____April_____ 1953, Uncl.

L 25074-65   EWT(1)/T/EEC(b)-2/EWP(1)   IJP(c)
ACCESSION NR: AP5003431

8/0181/65/007/001/0167/0176

AUTHOR: Garber, R. I.; Polyakov, L. M.

TITLE: Change in density under plastic compression of ionic crystals

SOURCE: Fizika tverdogo tela, v. 7, no. 1, 1965, 167-176

TOPIC TAGS: density change, stress measurement, strain measurement, rupture strength, ionic crystal

ABSTRACT: The purpose of the investigation was to study further the processes participating in failure under plastic deformation, by determining the connection between the stress, strain, and the residual changes in the density. To this end, samples of natural rock salt and of potassium chloride grown from the melt were subjected to uniaxial compression, and the stress, strain, and relative change in volume were measured. The samples were parallelepipeds measuring 5--6 mm in cross section and 14--16 mm in length. The change in volume was measured with the aid of equipment similar to that described by Bridgman (J. Appl. Phys. v. 20, 1241, 1949). The results show that plastic compression of the crystals leads to a re- sidual change in density, which is due to the competing influence of the disper-

Card 1/2

L 25074-65
ACCESSION NR: AP5003431

sion and renewal of the contacts. During the initial stages, the density in-
creases, after which it decreases and remains constant within a certain strain
interval. Further deformation leads to an abrupt decrease in the density, which
continues up to the instant when the crystal fails. In a region of relatively
small change in density, the main process is the subdivision of a crystal into
blocks, with formation of ultramicroscopic defects. The abrupt decrease in den-
sity is connected with the formation of large defects, the growth of which leads
to failure of the crystal. Almost the entire plastic part of the deformation oc-
curs with the average sample density changing by approximately 10^{-5}, whereas
local changes in the density near the slip bands amount to 10^{-4}. "The authors
thank Y. K. Sklyarov and V. I. Bashmakov for help with the measurements." Orig.
art. has: 11 figures and 2 formulas.

ASSOCIATION: Fiziko-tekhnicheskiy institut AN UkrSSR, Khar'kov (Physicotechnical
Institute, AN UkrSSR)

SUBMITTED: 08Jul64   ENCL: 00   SUB CODE: SS, ME

NR REF SOV: 010   OTHER: 006

Card 2/2

L 42049-65   EWT(m)/EWP(w)/EWA(d)/T/EWP(t)/EWP(b)   JD

ACCESSION NR: AP5010939   UR/0286/65/000/007/0122/0122

AUTHORS: Garber, R. I.-G.; Polyakov, L. M.

TITLE: A method for determining inherent plasticity. Class 42, No. 169848

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 7, 1965, 122

TOPIC TAGS: plasticity, deformation rate, density determination

ABSTRACT: This Author Certificate presents a method for determining the inherent plasticity of metals, alloys, and nonmetallic solid materials. To increase the accuracy of estimating the inherent plasticity, the macroscopic density of the specimen is measured during plastic deformation, while the deformation, during whose uniform increase there occurs a sharp decrease of plasticity, is taken as the characteristic of the inherent plasticity.

ASSOCIATION: Fiziko-tekhnicheskiy institut AN UkrSSR (Physico-technical Institute, AN UkrSSR)

SUBMITTED: 25Jul63   ENCL: 00   SUB CODE: IE

NO REF SOV: 000   OTHER: 000

Card 1/1

POLYAKOV, L.M., inzh.

Asynchronous stepping motor. Izv. vys. ucheb. zav.; energ.
7 no.10:32-39 O '64.   (MIRA 17:12)

1. Moskovskiy stankoinstrumental'nyy institut. Predstavlena
kafedroy elektrotekhniki.

L 22570-66   EWT(l)

ACC NR: AP6012963   SOURCE CODE: UR/0143/65/000/002/0040/0044

AUTHOR: Polyakov, L. M. (Engineer)   5 1
                                                                                /3

ORG: Moscow Institute of Machine Tools and Instruments (Moskovskiy stankoinstrumental'-
nyy institut)

TITLE: Dynamics of asynchronous motor operation in the step mode

SOURCE: Izvestiya vysshikh uchebnykh zavedeniy. Energetika, no. 2, 1965, 40-44

TOPIC TAGS: electric motor, differential equation, electronic circuit, electric
resistance, electric inductance

ABSTRACT: The article analyzes the dynamic behavior of an induction motor
energized by a unit step input. First the stator and rotor phase currents
are found from the differential equation of the circuit accounting to the
inductance and resistance, with the total voltage drop being equal to the
rate of change of flux linkages. Next the torque is found and the appro-
priate expression is substituted into the general differential equation of
motion. The solution of this equation is given in terms of angular velocity
and angular displacement; both are plotted as functions of time. The torque
is shown to vary sinusoidally with time. In addition there are shown: 1)
oscillograms of the stator and rotor currents during phase commutation, 2)
oscillograms of the speed and torque after application of a unit step.
Orig. art. has: 4 figures and 30 formulas. [JPRS]

SUB CODE: 09 / SUBM DATE: 24Feb65 / ORIG REF: 001
Card 1/1   UDC: 621.316.718.5

L 22556-66   EWT(d)/EWP(v)/EWP(k)/EWP(h)/EWP(l)
ACC NR: AP6011248   SOURCE CODE: UR/0413/66/000/006/0091/0092

INVENTOR: Polyakov, L. M.   40
                                                                  B

ORG: none

TITLE: Device for determining the ductility and transverse-deformation coefficient
of solids in tension and compression. Class 42, No. 179970

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 6, 1966, 91-92

TOPIC TAGS: plastic deformation, plastic deformation test, compression test, metal
test, tensile test, test equipment, test instrumentation, ductility

ABSTRACT: An Author Certificate has been issued for a device for determining the
ductility and transverse-deformation coefficient of solids in tension and com-
pression. The device (see Fig. 1) contains a casing with two liquid-filled inter-
connecting cylindrical chambers and two plungers rigidly connected together and
moving within the above chambers. One of the plungers transmits the load to the
sample mounted between the plungers, while the other compensates for the change in
volume caused by displacement of the first plunger. To improve precision, meas-
urement sensitivity, and automatic recording of diagrams reflecting changes in
sample volume due to deformation, the plunger resembles a rigid cup with the sample
threaded into its bottom; this eliminates the effect of elastic deformation of the
plunger on the measurement of variations in sample volume, since the tubular part

Card 1/2   UDC: 539.374.08:(620.172.23+620.173.23.)

L 22556-66

ACC NR: AP6011248
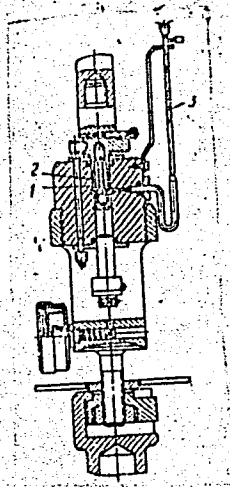
Fig. 1. Deformation testing device.

1 - Test sample; 2 - plunger; 3 - volume meter with resistance transducer.

of the plunger does not bear loads. This part also contains a volume meter with a resistance transducer, a heat compensator for temperature-induced changes in liquid volume, and an electronic potentiometer. Orig. art. has: 1 figure.   [LB]

SUB CODE: 14, 13/ SUBM DATE: 29Apr65/ ATD PRESS: 4228

Card 2/2 BK

POLYAKOV, L.M. (Odessa); RASHKOVICH, M.P. (Odessa)

Special features of closed-loop speed control systems using
excitation flux changes. Elektrichestvo no.9:21-26 S '65.

(MIRA 18:10)

GARBER, R.I.; POLYAKOV, L.M.

Change in density of plastically deformed ionic crystals. Fiz.
tver. tela 7 no.1:167-176 Ja '65.

(MIRA 18:3)

1. Fiziko-tekhnicheskiy institut AN UkrSSR, Khar'kov.

POLYAKOV, L.M.; MALIK, G.N.

Investigating the sintering of metals. Porosh. met. 3 no.4:
6-16 Jl-Ag '63.   (MIRA 16:10)

1. Fiziko-tekhnicheskiy institut AN UkrSSR.
                (Sintering)

L 19909-63   EWP(q)/EWT(m)/EWP(B)/BDS   AFFTC/ASD   JD

ACCESSION NR: AP3005808   S/0226/63/000/004/0006/0016

AUTHORS: Polyakov, L. M.; Malik, G. N.

TITLE: Investigation of metal sintering

SOURCE: Poroshkovaya metallurgiya, no. 4, 1963, 6-16

TOPIC TAGS: sintering, activation energy

ABSTRACT: Experiments were made on the sintering of technically pure iron samples. Sintering was carried out in a vacuum $1.33-0.13 KN/m^2$ at 525-1060C, pressures of $1.47-607.6 MN/m^2$ and time intervals from 3 minutes to 10 hours. The relation of the consolidation strength to temperature, pressure and sintering time was determined, and the relation of the beginning of setting to crystallographic grain orientation, roughness of grain surface, and the presence of scales on the surface have been studied. It was established that the increases in pressure, temperature, and sintering time increase the strength of the product. The microroughness of the fragment surfaces prevented a simultaneous contact along the whole contact-surface. The contact was achieved subsequently by a further increase in pressure to level the rough places. An increase in strength is possible because of the diffusive growth of contact areas due to creep, coalescence, and closing of voids

Card 1/2

L 19909-63
ACCESSION NR: AP3005808

between the coalescing surfaces. This is achieved by increasing temperatures
and sintering times. Durable bonds were obtained by a close contact between the
particle surfaces and by nondiffusive local rearrangements of the crystal lattices
on the contact surface. The activation energy of atomic displacement during rear-
rangement was 35.1 kJ/mol., considerably smaller than the activation energy of iron
diffusion. "The authors express their appreciation to R. 1. Garber and V. S. Kogan
for their participation in the discussion of the results and to V. K. Sklyarov for
his assistance in conducting the experiment." Orig. art. had: 5 formulas, 5
figures and 7 graphs.

ASSOCIATION: Fiziko-tekhnicheskiy institut AN USSR (Physico-Technical Institute,
Academy of Sciences, Ukrainian SSR)

SUBMITTED: 20Sep62   DATE ACQ: 06Sep63   ENCL: 00

SUB CODE: ML   NO REF SOV: 011   OTHER: 010

Card 2/2

SVIRIDENKO, S.Kh.; AKHMECHET, L.S.; VOLKOV, A.A.; MEYSTEL', A.M.;
    MIZHEVSKIY, L.L.; POLYAKOV, L.M.; RASHKOVICH, M.P.;
    SRIBNER, L.A.; KHVALOV, Yu.G.; SHPIGLER, L.A.; SHRAGO,
    L.K.; ORLIKOV, M.L., inzh., retsenzent; SVECHNIKOV, L.V.,
    inzh., retsenzent; MATSIYEVSKIY, A.G., inzh., red.

[Elements of the automation of machine tools] Elementy
avtomatizatsii metallorezhushchikh stankov. Moskva, Mash-
giz, 1964. 210 p.   (MIRA 17:12)

VOROB'YEV, A.T., glav. red.; POLYAKOV, L.N., zam. glav. red.; BORISOV,
     Ye.G., red.; IVASYSHIN, S.N., red.; IMANALIYEV, Sh.I., red.; LYA-
     SHENKO, I.V., red.; OLEYNIK, A.K., red. Prinimali uchastiye: BEK-
     BOYEV, D.B., spets. red.; KIRKIN, M.F., spets. red.; TETEVIN, G.P.,
     spets. red.; YUDAKHIN, N.P., red.; YEFIMOV, N.A., tekhn. red.

[Agriculture of Kirghizistan] Sel'skoe khoziaistvo Kirgizii; kratkii
spravochnik. Frunze, Ob-vo po raspr. polit. i nauchn. znanii Kirgiz-
skoi SSR, 1961. 199 p.   (MIRA 14:10)
               (Kirghizistan—Agriculture)

POLYAKOV, L.P.; RAZUVAYEV, V.D.; GOLIKOV, A.Ya.

New method for excluding lost-circulation zones in well drilling.
Burenie no.9:8-10. '65.   (MIRA 18:10)

1. Konstruktorskoye byuro neftyanoy i gazovoy promyshlennosti
ob"yedineniya "Saratovneftegaz".

POLYAKOV, L.P.

State standards for terpene colloxylin varnishes for furniture.
Gidroliz, i lesokhim, prom. 18 no.3:5-6 '65.   (MIRA 18:5)

1. Moskovskaya lesokhimicheskaya fabrika.

POLYAKOV, L.P., doktor tekhn.nauk

Constructing lines of influence of internal forces with
the aid of models of structures. Stroi.konstr. no.1:
153-161 '65.

(MIRA 19:1)

1. Kiyevskiy inzhenerno-stroitel'nyy institut.

124-57-1-1049

Translation from: Referativnyy zhurnal, Mekhanika, 1957, Nr 1, p 147 (USSR)

AUTHOR: Polyakov, L. P.

TITLE: Approximate Calculation of Arch Bridges With Consideration of the Superstructure Above the Arches (Priblizhennyy raschet arochnykh mostov s uchetom nadarochnogo stroyeniya)

PERIODICAL: Sb. tr. Kiyevsk. inzh.-str. in-ta, 1954, Nr 10, pp 35-45

ABSTRACT: Formulas are given for the calculation of an arch bridge with consideration of the simultaneous working of the arch and of the structure above the arch. It is assumed therein that the braces of the superstructure are equipped with hinges at their ends.

1. Arch bridges--Mathematical analysis   P. S. Morozov

Card 1/1

POLYAKOV, Leonid Petrovich; REZNICHENKO, I.Ye., red.; BABIL'CHANOVA, G.A., tekhn. red.

[Calculations for arched bridges]Raschet arochnykh mostov. Kiev, Gosstroiizdat USSR, 1962. 358 p.   (MIRA 15:10)
                    (Bridges, Concrete)

POLYAKOV, L.P.,
    I.F. CHISTOV, Lesokhim. Prom. 1939, No. 4, 34-9

POLYAKOV, L.P., inzhener po tekhnike bezopasnosti.

Provide modern equipment for structural drilling.   Bezop.truda
v prom. 1 no.7:37 Jl '57.   (MIRA 10:7)

1. Geologo-poiskovaya kontora tresta Saratovneftegazrasvedka.
              (oil fields--Equipment and supplies)

POLYAKOV, L. P.
    I. F. CHISTOV. Lesokhim. Prom. 1939, No. 7, 24-30

POLYAKOV, L.P.,
    I.F. CHISTOV, Russ. 57,862, Sept. 30, 1940.

MOLDAVSKIY, Oleg Petrovich, MARKUSHIN, Gennadiy Nikolayevich;
        POLYAKOV, Lev Petrovich; RAZUVAYEV, Vladimir
        Dmitriyevich; FOFANOVA, L., red.

        [Improving boring equipment and technology] Sovershen-
        stvovanie tekhniki i tekhnologii bureniia. [By] O.P.
        Moldavskiy i dr. Saratov, Saratovskoe knizhnoe izd-vo,
        1963. 80 p.   (MIRA 17:7)

POLYAKOV, L.V., inzh.; USTINOV, B.G., inzh.

New two-stand 1200 mill for the skin-pass rolling of sheet
steel. Sbor. st. NIITIAZHMASHa Uralmashzavoda no.6:104-117
'65.   (MIRA 18:11)

POLYAKOV, L.Ye., kand.med.nauk, LASHKOV, K.V.

History of the establishment of Soviet public health statistics
(1917-1920). Sov.zdrav. 17 no.7:49-53 Jl '58   (MIRA 11:8)

1. Iz kafedry organizatsii meditsinskogo obespecheniya voysk
Voyenno-meditsinskoy ordena Lenina akademii imeni S.M. Kirova.
        (SANITATION, hist.
            sanitary statist. (Rus))
        (STATISTICS,
            sanitary statist., hist (Rus))
        (PUBLIC HEALTH, statist.
            in Russia (Rus))
        (VITAL STATIST.,
            same (Rus))

POLYAKOV, L.Ye., kand.med.nauk, LASHKOV, K.V.

Work of P.I. Kurkin, in military medical statistics and sanitary
demogr-phy on the 100th anniversary of his birth. Sov.zdrav. 17
no.8:39-43 Ag '58   (MIRA 11:9)

1. Iz Voyenno-meditsinskoy ordena Lenina akademii imeni S.M. Kirova.
        (KURKIN, PETR IVANOVICH, 1858-1934)
        (STATISTICS,
            med., contribution of P.I. Kurkin (Rus))

POLYAKOV, L.Ye., inzh.

Determination of natural frequencies and calculation of
turbomachine dampers. Trudy VNIIKIMASH no.4:116-140 '61.
                                                    (MIRA 15:1)
                        (Turbomachines)

KAMINSKIY, Lev Semenovich [deceased]; prof., POLYAKOV, L.Ye., red.

[Statistical processing of laboratory and clinical data; use of statistics in the scientific and practical work of the physician] Statisticheskaia obrabotka laboratornykh i klinicheskikh dannykh; primenenie statistiki v nauchnoi i prakticheskoi rabote vracha. Izd.2. Leningrad, Meditsina, 1964. 250 p.   (MIRA 17:11)

POLYAKOV, L.Ye., dotsent (Leningrad)

From the history of Russian sanitation and military medical
statistics. Sov.zdrav. 21 no.8:63-68 '62.   (MIRA 15:11)
     (MILITARY MEDICINE--STATISTICS)(DISEASES--REPORTING)

POLYAKOV , L.Ye (Military Medical Academy imeni Kirov)

"Problems and Methods of Teaching Mathematical Statistics to Physicians of Therapeutic and Prophylactic Institutions, Experimenters and Medical Laboratory Workers"

report presented at the 3rd Conference on the use of Mathematics in Biology, Leningrad University, 23-28 Jan 1961.

(Primeneniye matematicheskikh Metodov v Biologii. II, Leningrad, 1963, pp.5-11

(Moscow Agricultural Academy imeni Timiryazev)

POLYAKOV, L.Ye., dotsent

M.V.Lomonosov and his letter "On the preservation and multiplication
of the Russian nation"; on the 250th anniversary of his birth and
the 200th anniversary of his treatise on the population of Russia).
Gig. i san. 27 no.3:46-49 Mr '62.   (MIRA 15:4)
                (LOMONOSOV, MIKHAIL VASILEVICH, 1711-1765)
                            (POPULATION)

KAMINSKIY, Lev Semenovich; POLYAKOV, L.Ya., red.; SHEVCHENKO, F.Ya.,
        tekhn.red.

        [Processing clinical and laboratory data; use of statistics in
        the research and practice of the physician] Obrabotka klini-
        cheskikh i laboratornykh dannykh; prim nenie statistiki v nauchnoi
        i prakticheskoi rabote vracha. Leningrad, Gos.izd-vo med.lit-ry
        Medgiz, Leningr.otd-nie, 1959. 195 p.   (MIRA 13:4)
                        (MEDICAL STATISTICS)

POTULOV, B.M.; POLYAKOV, L.Ye.

Works of an outstanding worker of Soviet public health. Sov.med.
21 no.9:152-155 S '57.   (MIRA 11:1)
        (SOLOVIEV, ZINOVII PETROVICH, 1876-1928)

POLYAKOV, L.Ye., podpolkovnik meditsinskoy sluzhby, dotsent.

Scientific analysis of the morbidity of military personnel as a
basis for the therapeutic and preventive work of military medical
services. Voen.-med.zhur. no.8:36-39 '64.   (MIRA 18:5)

POLYAKOV, L.Ya., kandidat meditsinskikh nauk

Sanitation statistics in Z.P.Solov'ev's research and in his
organizational and practical activity. Gig. i san., 22 no.8:
47-51 Ag '57.   (MIRA 10:9)
         (PUBLIC HEALTH
             contribution Z.P.Solov'ev)
         (SOLOV'EV, ZINOVII PETROVICH, 1876-1928)

POLYAKOV, L.Ye., mayor med.sluzhby, kand.med.nauk

Result of a study of the health of individual members of military
personnel. Voen.-med.zhur. no.10:75-77 O '58.   (MIRA 12:12)
            (ARMED FORCES PERSONNEL
                    phys. develop. & morbidity of soldiers (Rus))

GRIGOR'YEV, A.N., prof., gvardii general-mayor meditsinskoy sluzhby; GAVRILOV,
O.K., dotsent, polkovnik meditsinskoy sluzhby; POLYAKOV, L.Ye., dotsent,
mayor meditsinskoy sluzhby; LASHKOV, K.V., podpolkovnik meditsinskoy
sluzhby

Cybernetics and problems of administration in medical service.
Voen.-med.zhur. no.6:76-80 Je '59. (MIRA 12:9)
        (CYBERNETICS
            in military med. (Rus))
        (MEDICINE, MILITARY AND NAVAL
            cybernetics in military med. (Rus))

POTULOV, B.M., polkovnik med. sluzhby, kand. med. nauk; POLYAKOV, L.Ye., mayor med. sluzhby. kand. med. nauk

Works of an outstanding figure in Soviet military medicine. Voen. med. zhur. no.4:80-83 Ap '57.   (MIRA 12:7)
　　　(MEDICINE, MILITARY AND NAVAL,
　　　　　contribution of Z.P. Solov'ev (Rus))
　　　(BIOGRAPHIES,
　　　　　Solov'ev, Zinovii P. (Rus))

POLYAKOV, L.Ye., mayor meditsinskoy sluzhby, kandidat meditsinskikh nauk

Problems of military medical statistics in Z.P.Solov'ev's works.
Voen.-med.zhur. no.10:89-93 O '56.   (MIRA 10:3)
        (MILITARY STATISTICS)
        (SOLOV'EV, ZINOVII PETROVICH, 1876-1928)

POLYAKOV, L.Ye., dotsent (Leningrad)

New problems in the statistical organization of public health in
the U.S.S.R. and measures for their solution. Sov.zdrav. 19 no.10:
58-64 '60.   (MIRA 14:1)

1. Iz kafedry organizatsii i taktiki meditsinskoy sluzhby (nachal'nik -
prof. A.N.Grigor'yev) Voyenno-meditsinskoy Lenina akademii imeni
S.M.Kirova (nachal'nik - prof.P.P.Goncharov).
                     (PUBLIC HEALTH—STATISTICS)

POLYAKOV, L.Ye., dotsent; LASHKOV, K.V.

Work of N.I. Teziakov in the field of military sanitation and
sanitary statistics. Gig. i san. 25 no.4:58-62 Ap '60.
(MIRA 13:8)
1. Iz Voyenno-meditsinskoy ordena Lenina akademii imeni S.M.Kirova.
(TEZIAKOV, NIKOLAI IVANOVICH, 1859-1925)

POLYAKOV, L.Ye., dotsent; MALINSKIY, D.M.

"Statistical study of malignang neoplasms" by A.M.Merkov, A.V. Chaklin. Reviewed by L.E. Poliakov, D.M.Malinskii. Vop. onk. 9 no.7:123-126 '63   (MIRA 16:12)

POLYAKOV, L.Ye.

Objectives and methods of teaching the elements of mathe-
matical statistics to physicians of therapeutic and prophy-
lactic institutions, experimenters, and workers of medical
laboratories. Prim. mat. metod. v biol. no.2:21-25 '63.
(MIRA 16:11)

POLYAKOV, L.Ye., podpolkovnik meditsinskoy sluzhby, dotsent

First medical report on the health of Russian army troops. Voen.-
med. zhur. no.7:93-94 Jl '61.   (MIRA 15:1)
              (MILITARY MEDICINE)

POLYAKOV, L.Ye., dotsent (Leningrad)

Medical cybernatics for Soviet public health. Sov. zdrav. 20
no.8:27-31 '61.   (MIRA 15:1)
          (CYBERNETICS)   (PUBLIC HEALTH)

POLYAKOV, L.Ye., dotsent (Leningrad)

Military sanitary demographic and medical statistical research of
S.A.Novosel'skii. Sov. zdrav. 21 no.4:44-48 '62.   (MIRA 15:5)
          (NOVOSEL'SKII, SERGEI ALEKSANDROVICH, 1872-1953)

POLYAKOV, L.Ye. (Leningrad)

Medical cybernetics and medical statistics. Sov. zdrav. 21 no.6:29-32
'62.
                                                        (MIRA 15:5)

1. Iz kafedry voyenno-meditsinskoy statistiki i kibernetiki
(ispolnyayushchiy obyazannosti nachal'nika - dotsent L.Ye.Polyakov)
Voyenno-meditsinskoy ordena Lenina akademii imoni S.M.Kirova
(nachal'nik - prof. P.P.Goncharov).
          (MEDICAL STATISTICS)   (CYBERNETICS)

POLYAKOV, M.

"The rate of exchange of the ruble" by I.Aizenberg. Reviewed
by M.Poliakov. Den.i kred. 17 no.9:85-89 S '59.
                                          (MIRA 12:12)
            (Foreign exchange) (Aizenberg, I.)

POLYAKOV, M.

M

*Polyakov, M. *How to Overcome Rejects in Castings.* [In Russian.] Pp. 103, with 65 illustrations. 1932. Kharkiv: Ontuu, Karl Liebknecht St. 38. (k. 60.)

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

POLYAKOV, M.

Call us by phone. Mest.prom.i khud.promys. 3 no.5:28 My '62.
                                              (MIRA 15:6)
1. Direktor Petropavlovskogo kombinata bytovogo obsluzhivaniya
naseleniya, TSelinnyy kray.
            (Virgin Territory—Service industries)

POLYAKOV, M.,slesar'

Universal wrench. Na stroi.Mosk. no.1:28 Ja '59.
                                                  (MIRA 12:1)

1. Mekhanicheskaya masterskaya zavoda zhelezobetonnykh izdeliy
No.4.
                    (Machinists' tools)

POLYAKOV, M.

Production of protein feeds of animal origin. Miss. ind. SSSR
29 no.5:43-44 '58.   (MIRA 11:10)

1. Otdel pishchevoy promyshlennosti Gosplana RSFSR.
        (Meat industry--By-products)
        (Feeding and feeding stuffs)

POLYAKOV, M.

Foreign exchange condition of western European countries. Den. 1
kred. 16 no.3:70-79 Mr '58.   (MIRA 11:5)
                         (Europe, Western--Money)

POLYAKOV, M

136-3-1/25

AUTHORS: Dzhumatayev, F., Perkaleva, V and Polyakov, M.

TITLE: On the Development of a Scheme for the Flotation of
         Polymettalic Ores. (K voprosu razrabotki skhemy flotatsii
         polimetallicheskikh rud).

PERIODICAL: Tsvetnyye Metally, 1957, No.3, pp.1-5 (USSR)

ABSTRACT: In an article in "Tsvetnyye Metally", 1956, No.11 by
         I. N. Plaskin, A. M. Okolovich, V. V. Shikhovaya-
         Neginskaya and G. M. Dmitriyeva some problems in the develop-
         ment of a scheme for the flotation of polymetallic ore were
         formulated and proposed for discussion. The present
         article contains discussions of these and additional
         problems, based mainly on experience at the Belousovsk
         beneficiation works. The quality of the ore (Pb $\leqslant$ 1%)
         there has recently been changing and a two-stage ore
         grinding process has been adopted; while research is
         proceeding on the corresponding two-stage flotation of the
         lead sulphide, which is especially important at this works
         because of the extensive adoption of direct successive
         flotation there.   A qualitative flow-sheet for two-stage
         flotation is shown and discussed, different variants being
1/2   compared. Agreeing with the contention of Plaskin et al.
         that it is very difficult to obtain with two-stage flotation

9(2)

AUTHORS: Polyakov, M., Mitrofanov, V., Filyukov, L., Levintov, G.

TITLE: New Mass-Production Radio Receivers (Novyye massovyye radiopriyemniki)

ABSTRACT: The Soviet radio industry has begun the mass-production of the "Zarya" and the "Strela" radio receivers. Although the same types of miniature tubes are used in both, their circuitry is different. Figure 1 shows the circuit diagram of the "Zarya" and Figure 2 that of the "Strela" receiver. They are designed for reception of radio stations working on medium (187-577) and long (723-2000) waves. They may be connected to any type of record player. The sensitivity of these receivers at an output of not less than 0.5 watts and a sound pressure of 3-3.5 bar, is not less than 400 microvolts. The range of reproducible sound frequencies is from 150 to 5000 cps at a non-linear

Card 1/2

POLYAKOV, M.

Self-supporting factory. Sil'.bud. 12 no.2:17-18 F '62.
(MIRA 15:8)

1. Predsedatel' soveta Volochiskoy mezhkolkhoznoy stroitel'skoy
organizatsii Khmel'nitskoy oblasti.
(Khmel'nitskiy Province—Brick industry)

POLYAKOV, M.

Increasing the activity of artel members. Prom. koop. no.9:11-12
S '57.   (MIRA 10:9)
(Cooperative societies)

Polyakov, M.

DZHUMATAYEV, F.;PERKALEVA, V.;POLYAKOV, M.

Development of a flotation diagram for complex ores. TSvet. met.
30 no.3:1-5 Mr '57.   (MIRA 10:4)
            (Flotation)

POLYAKOV, M., (g. Yaroslavl').

In the Yaroslavl Province Producers Council they suppress
criticism. Prom. koop. no.12:29 D '56. (MLRA 10:2)

(Yaroslavl Province--Cooperative societies)

POLYAKOV, M., insh.

Thermomechanical equipment for slaking lime. Stroitel' no.11:20
'58.   (MIRA 11:12)
                        (Lime)

POLYAKOV, M.; LICHIN, O. [Lychyn, O.], kand. tekhn. nauk

Ore mining withoug human power. Nauka i zhyttia 12 no.12:58
D '62. (MIRA 16:8)

1. Chlen-korrespondent AN UkrSSR (for Polyakov).

1. POLYAKOV, M.

2. USSR (600)

4. Rendering Industry

7. Unused possibilities in the production of food fats. Mias. ind. SSSR. 24,
   No. 2, 1953.

9. Monthly List of Russian Accessions, Library of Congress, ____April____ 1953, Uncl.

1. POLYAKOV, M., TRUBENKOV, V.

2. USSR (600)

4. Foreign Exchange

7. The State Bank and the U.S.S.R.'s international settlements. Fin. i kred. SSSR no. 2, 1952.

9. Monthly List of Russian Accessions, Library of Congress, January, 1953. Unclassified.

POLYAKOV, M.

Fuss over the "convertibility" of foreign exchange. Den.i kred.
12 no.1:50-56 Jl'54.   (MLRA 8:2)
          (Foreign exchange)

POLYAKOV,M.

Currency exchange conflicts between West Germany and Great
Britain. Den. i kred. 13 no.6:46-52 Je '55. (MIRA 8:9)
(Great Britain--Foreign exchange problem) (Germany, West--
Foreign exchange problem)

POLYAKOV, M.

Overcoming seasonal fluctuations in the work of enterprises of the
meat industry of the R.S.F.S.R. Mias. ind. SSSR 32 no.5:32-33 '61.
(MIRA 14:11)

1. Gosplan RSFSR.
                    (Meat industry)

POLYAKOV, M.A.

Practices in controlling wireworms in corn fields. Zashch. rast. ot
vred. i bol. 7 no.11:29-30   N '62.   (MIRA 16:7)

1. Agronom po zashchite rasteniy Verkhne-Khavskogo rayona, Voronezhs-
kaya oblast'.

RIDER, V.A.; POLYAKOV, M.A.; DROZDOVSKIY, E.M., kand. sel'skokhoz.
nauk; NIKIFOROV, A.M.; NEMTSOVA, I.A., fitopatolog

Questions and answers. Zashch. rast. ot vred. i bol. 8
no.3:37,39 Mr '63. (MIRA 17:1)

1. Nachal'nik Voronezhskoy stantsii zashchity rasteniy
(for Rider). 2. Nachal'nik Verkhnekhavskogo otryada po
bor'be s vreditelyami i boleznyami rasteniy (for Polyakov).

POLYAKOV, M.A.; inzh; SAFONOV, A.P., kand. tekhn, nauk

Increasing the operating efficiency of water jet elevators.
Elek.sta. 29 no.9:25-28 S '58.   (MIRA 11:11
            (Heat engineering)

POLYAKOV, M.A.

New kind of a vacuum belt press. Ogneupory 27 no.8:364-366
'62.   (MIRA 15:9)

1. Krasnogorovskiy ogneupornyy zavod imeni Lenina.
            (Power presses) (Refractory materials)

L 3668-66   EWT(1)/EWP(m)/FCS(k)   UR/0264/65/000/006/A004/A004
ACCESSION NR: AR5016960   629.13.014.3:533.601   2-/

                                                                                    13

SOURCE: Ref. zh. Vozdushnyy transport. Svodnyy tom, Abs. 6A41

AUTHORS: Polyakov, M. B.; Shcherbak, Ya. S.

TITLE: Thin profile of a supersonic wing with a least mean coefficient of heat loss
at given aerodynamic characteristics

CITED SOURCE: Dokl. 3-y Sibirsk. konferentsii po matem. i mekhan., 1964. Tomsk,
Tomskiy un-t, 1964, 336-337

TOPIC TAGS: wing profile, aerodynamics, heat loss

TRANSLATION: The article presents a solution to an isoperimetric variational
problem of determining the profile form for a supersonic wing. This form provides
for the least mean coefficient of heat loss at given aerodynamic characteristics.
The solution was carried out for quantity M from 7 to 8. The flow was assumed to be
fully laminar or fully turbulent, and the local coefficients of friction and of heat
loss were computed according to formulas for a plate, taking into account the local
values of the flow parameters. The calculations show that the maximum local coeffi-
cients of heat loss are 80-85% lower and the mean coefficients are 15% lower than
those of a plate. O. Vershova

SUB CODE: AS   ENCL: 00

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