

PROKHORSKIY, A. A.

Elektricheskiye stantsii i tyagovyye podstantsii Electric power
stations and traction sub-stations, by K. G. Kuchma, A. A. Prokhorskiy
[1] N. I. Divavin. Moskva, Transzheldorizdat, 1958.
654 P. Illus., Diags., Graphs, Tables.
Bibliographical footnotes.

GUBER, Leonid Gsipovich; PERTSOVSKIY, Lazar' Moiseyevich; TROFIMOV, Valentin Ivanovich; PROKHORSKIY, A.A., inzh., retsenzent; BELYAYEV, I.A., inzh., red.; MEDVEDEVA, M.A., tekhn. red.

[Layout, installation, and use of traction substations]
Ustroistvo, montazh i ekspluatatsiia tiagovykh podstantsii.
Izd.3., perer. i dop. Moskva, Transzheldorizdat, 1962.
519 p. (MIRA 15:9)

(Electric railroads--Substations)

KUCHMA, Kalinik Georgiyevich, kand. tekhn. nauk; PROKHORSKIY,
Aleksandr Alekseyevich, inzh.; BENESHEVICH, I.I., kand.
tekhn. nauk, retsenzent; SIDOROV, N.I., inzh., red.;
BOBROVA, Ye.N., tekhn. red.

[Electric power plants and substations]Elektricheskie stan-
tsii i podstantsii. Moskva, Transzheldorizdat, 1962. 531 p.
(MIRA 15:9)

(Electric railroads—Current supply)
(Electric power distribution
(Electric power plants)

PROKHORSKIY, A.M. (Novokuznetsk)

Effectiveness of treatment of diseases of the peripheral nervous system in miners in night preventoria. Gig. truda i prof. zab. 6 no.5:46-48 My'62. (MIRA 16:8)

1. Novokuznetskiy institut usovershenstvovaniya vrachey.
(MINERS---DISEASES AND HYGIENE)
(NERVES, PERIPHERAL---DISEASES)

PROKHOTSKIY, G.

Inspectors and public workers. Avt.transp. 41 no.10:9 0 '63.
(MIRA 16:10)

1. Sekretar' Belorusskogo respublikanskogo komiteta professional'nogo
soyuza rabotnikov svyazi, rabochikh avtotransporta i shosseynykh
dorog.

PROKHOTSKIY, G.

Experience of advanced workers is public property. Avt.transp.
40 no.10:6-7 0 '62. (MIRA 15:11)

1. Sekretar' Belorusskogo respublikanskogo komiteta profsoyuza
rabotnikov svyazi, rabochikh avtotransporta i shosseynykh dorog.
(White Russia--Transportation, Automotive)

PROKHOTSKIY, G., inzh.

Base for a centralized maintenance of motor vehicles. Ayt. transp.
42 no. 12:20-21 D '64. (MIRA 18:4)

ZHUKOV, D.; PROKHORSKIY, G.; GRIGOR'YANTS, G., redaktor; KARYAKINA, M.
tekhnicheskiy redaktor.

[Telephony; manual for clubs and courses of the All-Union
Volunteer Society for Assistance to the Army, Air Force, and
Navy] Telefoniia; posobie dlia klubov i kursov Dosaaf. Moskva,
Izd-vo Dosaaf, 1954. 206 p. (MLRA 8:7)
(Telephone--Handbooks, manuals, etc.)

PROKHOROVICH, Ye.V.

PROKHOROVICH, Ye.V., zaslužhennyy vrach RSFSR

Activity of the Moscow Municipal Children's Clinical Hospital
No.1 during 40 years of Soviet public health service. *Pediatrics*
35 no.12:26-34 D '57. (MIRA 11:2)
(MOSCOW--CHILDREN--HOSPITALS AND ASYLUMS)

KUCHMA, Kalinik Grigor'yevich,; PROKHORSKIY, Aleksandr Alekseyevich,;
DIVAVIN, Nikolay Ivanovich,; BELYAYEV, I.A., inzh., red.; BOBROVA,
Ye.N., tekhn. red.

[Electric stations and traction substations] Elektricheskie stantsii
i tiagovye podstantsii. Moskva, Gos. transp. zhel-dor. izd-vo, 1958.
654 p. (MIRA 11:11)

(Electric railroads--Substations)
(Electric power plants)

PROKHOTSKIY, Yu.M.

Some characteristics of silver halide photographic emulsions with laminated structure of microcrystals. Part 1. Zhur.nauch. i prikl. fot. i kin. 8 no.2:142-144 Mr-Ap '63. (MIRA 16:3)

1. Filial Vsesoyuznogo nauchno-issledovatel'skogo kinofotoinstituta, Shostka.

(Photographic emulsions--Testing)

VILENSKIY, Yu.B.; PROKHOTSKIY, Yu.M.; KHODCHENKOV, A.N.

Measurement of the spectral sensitivity to light of photographic materials. Zhur. nauch. i prikl. fot. i kin. 3 no.4:287-288 J1-Ag '58. (MIRA 11:9)

1. Shostka, filial Nauchno-issledovatel'skogo kinofotoinstituta.
(Photographic sensitometry)

S/C61/62/C00/C09/052/075
B166/B144

AUTHORS: Prokhotskiy, Yu. M., Belik, S. A.

TITLE: Chlorobromosilver photographic emulsions with laminar microcrystals

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 9, 1962, 494-495, abstract 9L437 (Tr. Vses. n.-i. kinofotoin-ta, no. 43, 1961, 5-16)

TEXT: A method of obtaining photographic emulsions with laminar silver halide microcrystals is suggested $[(AgHal_1)_x AgHal_2]_y$. The method depends on depositing the silver halide from the shell onto the silver halide in the nucleus. Two series of emulsions were got $[(AgBr)AgCl]$ and $[(AgCl)AgBr]$, differing in the ratio of silver chloride and silver bromide. X-ray diffraction analysis showed that the microcrystals so obtained are three-layered, consisting of pure AgCl and AgBr forming a nucleus and shell with an intermediate layer made up of a solid solution of these silver halides. The properties of AgBr and AgCl emulsions of different compositions and

Card 1/2

Chlorobromosilver photographic ...

S/081/62/000/009/052/075
B166/B144

structures are studied. Ideas are put forward as to the mechanism whereby
laminar silver halide microcrystals are formed. [Abstracter's note:
Complete translation.]

Card 2/2

PROKHOTSKIY, Yu.M.; VILENSKIY, Yu.B.

Reversal effect occurring under the action of light on emulsions with laminated structure microcrystals. Zhur. nauch. i prikl. fot. i kin. 9 no.3:202-203 My-Je '64.

(MIRA 18:11)

1. Filial Vsesoyuznogo nauchno-issledovatel'skogo kinofotoinstituta, Shostka. Submitted June 28, 1963.

PROKHOTSKIY, Yu.M.; BELIK, S.A.

Determining the quantitative composition of silver halide
powders obtained from photographic emulsions. Zhur. nauch.
i prikl. fot. i kin. 8 no.3:189-193 My-Je '63.

(MIRA 16:6)

1. Filial Vsesoyuznogo nauchno-issledovatel'skogo kinofoto-
instituta, Shostka.

(Silver halides--Spectra)

L 18058-63

EWT(1)/EWP(q)/EWT(m)/BDS/EED(b)-3 ASD/IJP(C) JD

ACCESSION NR: AP3001660

S/0077/63/008/003/0203/0204

AUTHOR: Prokhotskiy, Yu. M.

20 64
61

TITLE: Some properties of silver halide photographic emulsions with layered microcrystals. 2.

SOURCE: Zhurnal nauchnoy i prikladnoy fotografii i kinematografii, no. 3, 1963, 203-204

TOPIC TAGS: spectral sensitivity, photographic emulsion, silver halide, microcrystal, fog

ABSTRACT: The subject of the present investigation was a study of AgCl-AgBr emulsions containing 50 Mol% AgBr. The emulsions with AgCl-AgBr microcrystals were obtained via a positively charged solid phase and were subjected to a maturing process at 50C, during which changes in sensitivity to light, spectral sensitivity, and fogging were studied. Since it was shown by earlier investigations that the addition of AgI causes an increase in permanent lattice structure, 3 Mol% of AgI were coprecipitated with AgCl. Previous to the recharging the solid phase was separated and washed by the introduction of an excess of Ag ions. The precipitation of the surface layer was conducted by alternate additions of solutions

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L 18058-63

ACCESSION NR: AP3001660

containing Br and Ag ions. Subsequent treatment of the emulsion with the Chibisov, special surface, and deep penetrating developers provided data for evaluation of what was actually taking place. The developing in depth revealed a massive fogginess in the stratum, indicating the existence of deep-seated centers of fogginess originating in the positively charged stage of the emulsion, which were thereupon grown over on subsequent addition of Br ions. It was found that in the process of chemical maturing of the emulsion there takes place a widening of the zone of spectral light sensitivity, which is especially noticeable during the first two hours. This may indicate a diffusion of iodine ions towards the surface of microcrystals. Thanks are expressed to Yu. B. Vilenskiy, and to K. V. Chibisov, corresponding member of the Academy of Sciences, SSSR, for interest and valuable comments. Orig. art. has: 3 charts.

ASSOCIATION: Filial NIKFI, Shostka (Filial NIKFI)

SUBMITTED: 23Jul62

DATE ACQ: 12Jun63

ENCL: 00

SUB CODE: CH

NO REF SOV: 004

OTHER: 003

Card 2/2

PROKHOTSKIY, Yu.M.

Some characteristics of silver halide photographic emulsions with a laminated structure of microcrystals. Part 2. Zhur. nauch. i prikl. fot. i kin. 8 no.3:203-204 My-Je '63.

(MIRA 16:6)

1. Filial Vsesoyuznogo nauchno-issledovatel'skogo kinofotoinstitutu, Shostka.

(Photographic emulsions—Testing)

VILENSKIY, Yu.B.; PROKHOTSKIY, Yu.M.; KHODCHENKOV, A.N.

Measurement of the spectral sensitivity of photographic materials.

Zhur.nauch. i prikl.fot. i kin. 3 no.4:287-288 J1 - Ag '58.

(MIRA 12:3)

1. Filial Vsesoyuznogo nauchno-issledovatel'skogo kinofotoinstituta,
Shostka.

(Photography--Films)

PROKHOTSKIY, Yu. M.

Physical ripening of silver halide photographic emulsions
according to the data from the literature of the latest years.
Zhur. nauch. i prikl. fot. i kin. 8 no.3:230-245 My-Je '63.
(MIRA 16:6)

(Photographic emulsions)

PROKHOTSKIY, Yu.M.; VILENSKIY, Yu.B.

Chlorine-bromine-silver photographic emulsions with laminated structure
crystals. Zhur.nauch. i prikl.fot i kin. 5 no.5:363-364 S-O '60.

(MIRA 13:12)

1. Filial Vsesoyuznogo nauchno-issledovatel'skogo kinofotoinstituta,
Shostka.

(Photographic emulsions)

S/081/61/000/024/064/086
B149/B102

AUTHORS: Belik, S. A., Prokhotkiy, Yu. M., Rudenko, M. I.

TITLE: Application of X-ray method in the analysis of chloro-bromo-silver photographic emulsions

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 24, 1961, 455, abstract 24L529 (Zh. nauchn. i prikl. fotogr. i kinematogr., v. 6, no. 3, 1961, 231 - 233)

TEXT: With the aim of establishing the phase structure of emulsion micro-crystals, a method has been developed for X-ray structural analysis of silver halides in photographic emulsions. [Abstracter's note: Complete translation.]

Card 1/1

SOV 77-3-4-14/23

AUTHORS: Vilenskiy, Yu.B.; Prokhotskiy, Yu.M.; Khodchenkov, A.N.

TITLE: Measuring the Spectral Photosensitivity of Photographic Materials (Ob izmerenii spektral'noy svetochuvstvitel'nosti foto-materialov)

PERIODICAL: Zhurnal nauchnoy i prikladnoy fotografii i kinematografii, 1958, Vol 3, Nr 4, pp 287-288 (USSR)

ABSTRACT: The author describes his method for measuring the optical densities of spectrosensitograms, in determining the spectral photosensitivity of photographic materials by the GOI system. An MF-4 recording microphotometer is used and the modification consists in alterations to the method of processing the results. This reduces the time required by 2-3 times and gives greater accuracy. The result is a curve showing the spectral photosensitivity of the film or plate, and by the same method characteristic curves for different values of the light wavelength can be constructed from the microphotograms. There are 3 graphs.

Card 1/2

SOV 77-3-4-14/23

Measuring the Spectral Photosensitivity of Photographic Materials

ASSOCIATION: Shostka, Branch NIKFI (Shostka, the Filial of NIKFI)

SUBMITTED: April 25, 1958

1. Photographic emulsions--Photosensitivity 2. Microphotometers
--Applications 3. Photographic emulsions--Test results

Card 2/2

PROKHOVA, I. K., Cand Chem Sci -- (diss) "Kinetics of the decomposition of peroxides in solution and research into the intermediate products of catalysis." Moscow, 1960. 8 pp; (Moscow Order of Lenin Chemical Technology Inst im D. I. Mendeleev); 120 copies; price not given; (KL, 24-60, 128)

S/141/62/005/001/021/024
E039/E435

9.2571

AUTHORS: Shestopalov, V.P., Yakimenko, I.P., Prokhorov, V.V.

TITLE: Non-symmetrical electromagnetic waves in a spiral waveguide with longitudinally magnetized ferrites

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy.
Radiofizika, v.5, no.1, 1962, 179-183

TEXT: The dispersion equation is derived for this case and compared with the n-th propagation resonance. The form of the wave spectrum is shown graphically for two values of u where $u = \omega a/c$ (ω_H is the gyrofrequency, a is the radius of the spiral), indicating the regions where slow and fast waves are propagated and also the regions of no propagation. Dispersion curves are obtained by graphical analysis before and after resonance for the case when the direction of wave propagation coincides with the direction of the magnetic field and also the converse of this. The direction of the magnetic field influences the phase velocity of the waves. The distribution of the flux density for various types of waves is calculated using the usual expression for flux density of monochromatic waves
Card 1/2

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B

Non-symmetrical electromagnetic ...

S/141/62/005/001/021/024
E039/E435

along the z axis. As there is strong dispersion in this particular system the results are only qualitative and, in order to obtain more accurate results, it is necessary to use the quasi-monochromatic approximation. The calculation shows that most of the wave propagation occurs inside the spiral (in the ferrite). This is in agreement with the fact that the phase velocity of these waves is only very weakly dependent on $\text{ctg } \theta$. For the usual slow waves a large part of the flux distribution is outside the spiral. There are 3 figures.

ASSOCIATION: Khar'kovskiy gosudarstvennyy universitet
(Khar'kov State University)

SUBMITTED: June 17, 1961

Card 2/2

MOROZ, Ye.Ya.; BARYSHNIKOVA, L.V.; PESTEREV, P.N.; FROKHOR, Z.M.

Trichophytosis caused by zoophilic fungi in Sverdlovsk Province.
Vest. dermat. i ven. no.2:85-89 '65. (MIRA 18:10)

1. Mikologicheskaya laboratoriya (zav. - Ye.Ya.Moroz) Sverdlovskogo nauchno-issledovatel'skogo kozhno-venerologicheskogo instituta (direktor A.V.Bakhireva).

PROKHUROVSKIY, A.I.

Development of autoantigenic properties in experimental renal hypertension. Vrach. delo no.11:39-43 N'63 (MIRA 16:11)

1. Kafedra patologicheskoy fiziologii (zav. - prof. I.V. Kolpakov) Kuybyshevskogo meditsinskogo instituta.

PROKHUROVSKIY, A.I.

Development of autoantigenic properties in experimental renal hypertension . "rach. delo no.1:17-20 Ja'64 (MIRA 17:3)

1. Kafedra patologicheskoy fiziologii (zav. - prof. I.V. Kolpakov) Kuybyshevskogo meditsinskogo instituta.

L 9252-66 EWT(l)/EWT(m)/EWP(w)/T/EWP(t)/EWP(b) IJP(c) JD

ACC NR: AP5022724

SOURCE CODE: UR/0181/65/007/009/2789/2792

AUTHOR: Bol'shutkin, D. N.; Prokhvatilov, A. I.; Sil'vestrova, T. V.; Startsev, V. I.

ORG: Physicotechnical Institute of Low Temperatures AN UkrSSR, Kharkov (Fiziko-tekhnicheskiy institut nizkikh temperatur AN UkrSSR)

TITLE: Mechanical properties of polycrystalline ammonia under unilateral compression

SOURCE: Fizika tverdogo tela, v. 7, no. 9, 1965, 2789-2792

TOPIC TAGS: ammonia, solid mechanical property, low temperature physics

ABSTRACT: The strength and ductility of polycrystalline ammonia are studied as functions of temperature under unilateral pressure. Cylindrical specimens 10 mm in diameter and 40 mm long with uniform microstructure and polished ends were studied at temperatures from 77 to 160°K. Curves are given for the breaking point, limit of proportionality and relative compression as functions of temperature. These data show that crystalline ammonia has extremely low strength properties and ductility. Solid ammonia is quite brittle at the temperature of liquid nitrogen and shows elastic deformation right up to the breaking point. At stresses of 0.5-0.6 kg/mm², cracks are formed parallel to the axis of the specimen with an accompanying characteristic

Card 1/2

L 9252-66

ACC NR: AP5022724

sound and a slight reduction in loading (up to 100 g). The final breaking stress of $\sim 0.8 \text{ kg/mm}^2$ remains constant throughout the experimental temperature range. At this point there is an instantaneous reduction in loading to zero and the specimen is shattered. The shape of the fragments and the slight degree of deformation before the breaking point show that cleavage is the mechanism responsible for fracture of ammonia crystals between 77 and 130°K. Above 130°K ($0.6 T_m$), the ductility of the specimens increases and creep is observed under a constant load. Shearing is responsible for fracture above this point since cleavage strength remains nearly constant with temperature, while an increase in temperature causes a considerable reduction in shearing strength. The relationship between rate of uniform creep V and stress σ is $V = A\sigma^n$, where A and n are constants equal to 500 and 5 respectively at 160°K and stresses greater than the limit of proportionality. The energy of creep activation is found to be 5.6 Kcal/mol. This is approximately 10% lower than the heat of sublimation for solid ammonia. Orig. art. has: 3 figures.

SUB CODE: 07,20/

SUBM DATE: 16Apr65/

ORIG REF: 005/

OTH REF: 010

Card 2/2 *pu*

ACC NR. 117001702

SOURCE CODE: UR/0032/66/032/012/1522/1523

AUTHOR: Prokhvatilov, A. I.; Platkov, V. Ya.; Trikoza, A. I.; Koskalenko, V. A.

ORG: Physico-Technological Institute for Low Temperatures, AN UkrSSR (Fiziko-
tehnicheskii institut nizkikh temperatur AN UkrSSR)

TITLE: Attachment to pendulum-type impact testing machines for determining impact
ductility at low temperatures

SOURCE: Zavodskaya laboratoriya, v. 32, no. 12, 1966, 1522-1523

TOPIC TAGS: impact test, ductility, metallurgic testing machine

ABSTRACT: The article describes the details of a newly developed attachment to a Type
Mk-05 impact testing machine, which makes it possible to carry out tests at
temperatures in the range of 77-300°K, and a mechanism for the automatic feeding of the
sample from the cryostatic chamber onto the testing stand. A scheme of the unit is
shown in Figure 1. In experiments carried out with cryostats of different volumes
(from 170 to 1300 cm³) it was established that the temperature in the cryostats is
determined only as a function of the power of the heater. The unit described in the
article makes it possible to carry out slow cooling of three samples, and subsequent
testing at determined temperatures. Orig. art. has: 2 figures.

Card 1/2

UDC: 620.178.7.25

ACC NR: AP7001702

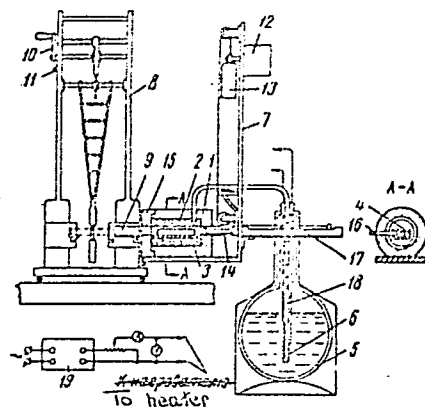


Figure 1. Scheme of attachment to a Type MK-05 impact testing machine for determining the impact ductility of materials at low temperatures.

SUB CODE: 11,20/SUBM DATE: none/ ORIG REF: 002/ OTH REF: 001

Card 2/2

PROKHVATILOV, A.I.; PUSTOVALOV, V.V.; SIL'VESTROVA, T.V.; STARTSEV, V.I.

Temperature dependence of the hardness of crystalline ammonia.
Ukr.fiz.zhur. 10 no.10:1127-1132 0 '65.

(MIRA 19:1)

1. Fiziko-tehnicheskii institut nizkikh temperatur AN UkrSSR,
Khar'kov. Submitted December 15, 1964.

PROKHUROVSEY, A.I.

Autoallergy in experimental renal hypertension. Pat. fiziol.
i eksp. terap. 9 no.3:37-41 My-Je '65. (MIRA 18:9)

i. Kafedra patologicheskoy fiziologii (zav.- prof. I.V. Kolpakov
[deceased.] Kuybyshevskogo meditsinskogo instituta.

L 8916-66 EWT(m)/EWP(w)/T/EWP(t)/EWP(h) LP(c) JD UR/0126/65/020/004/0574/0570 53
 ACC NR: AP5027144 44,55 47,55 44,55 23

AUTHOR: Palatnik, L. S.; Fedorov, G. V.; Prokhvatilov, A. I.;
Fedorenko, A. I. 44,55 47,55 44,55

ORG: Khar'kov Polytechnic Institute im. V. I. Lenin (Khar'kovskiy
 politekhnicheskii institut) 44,55

TITLE: Mechanical properties of vacuum condensates of aluminum 44,55 27
Fizika metallov i metallovedeniye, v. 20, no. 4, 1965,
 574-578 47,55, 18

TOPIC TAGS: aluminum, condensation reaction, vacuum sublimation

ABSTRACT: The article is devoted to a study of aluminum vacuum
 condensates obtained by vaporization of the metal from crucibles
 made of aluminum and beryllium oxide. Aluminum and its alloys were
 vaporized in a vacuum of 10^{-5} mm Hg. The condensates were formed
 on polished and carefully cleaned open steel rings, located co-
 axially with the crucible at a distance of 80 mm. A temperature
 gradient of $50-550^{\circ}\text{C}$ was created by heating one end of the ring
 and cooling the other. The thickness of the condensate film was
 approximately 40 microns. Vaporization of aluminum from aluminum

UDC:539.23 + 546.261

AP5027144

crucibles at 1200° was accompanied by the reaction of the material of the crucible with the molten aluminum. At the end of 3-4 hours there was formed a solid solution 1.5 mm thick on the walls of the crucible. In this, the amount of the alloying aluminum oxide was evaluated at from 8 to 10%. It was found that at a condensation temperature greater than 450°, the aluminum oxide in the condensate is formed in the crystalline state of gamma aluminum oxide; at lower temperatures, in an amorphous or subdispersed state. Aluminum oxide increases considerably the microhardness of the aluminum condensate (up to 330 kg/mm²). Annealing at 230-490° has the opposite effect. Samples condensed at temperatures of 450-520° do not recrystallize during annealing. Condensates of a multi-component alloy of aluminum, copper, magnesium, manganese, silicon, and iron, based on aluminum reinforced with aluminum oxide, have considerable strength (50-60 kg/mm²) and greater ductility than condensates of aluminum obtained under analogous conditions. Orig. art. has: 1 formula, 3 figures and 1 table.

SUB CODE: MM/

SUBM DATE: 24Jul64/

ORIG REF: 011/

PC
Card 2/2

L 21396-66 EWT(m)/EWP(t) IJP(c) JD/WW/JW
ACC NR: AP6003800 SOURCE CODE: UR/0181/66/003/001/0248/0249

AUTHORS: Bol'shutkin, D. N.; Prokhyatilov, A. I.

ORG: Physicotechnical Institute of Low Temperatures AN UkrSSR,
Khar'kov (Fiziko-tehnicheskij institut nizkikh temperatur AN UkrSSR)

TITLE: Temperature dependence of the moduli of elasticity of
crystalline ammonia

SOURCE: Fizika tverdogo tela, v. 8, no. 1, 1966, 248-249

TOPIC TAGS: ammonia, temperature dependence, elastic modulus,
elastic deformation, creep mechanism, stress relaxation

ABSTRACT: The authors used earlier compression-test data (FTT v. 7,
2789, 1965) to determine the static modulus of normal elasticity of
polycrystalline ammonia in the temperature interval 77 -- 160K. In-
asmuch as at $T > 110K$ a great reduction is observed in the limit of
proportionality of ammonia, making measurements on the deformation
curve difficult, they made use of the fact that the proportionality
limit can be increased by prior deformation of the samples. Conse-

Card 1/2

L 21396-66
ACC NR: AP6003800

quently the values of the modulus of normal elasticity were determined from the second-deformation curves the accuracy was 7 per cent. A plot of the temperature variation of the modulus of elasticity shows that the values of the dynamic modulus of normal elasticity differ little from the static modulus determined by the static method. With increasing temperature, the difference between the two increases from 14 per cent at 77K to 21 per cent at 160K, owing to the increased role of the relaxation processes and creep processes upon deformation of the crystalline ammonia. From the shear modulus of the crystalline ammonia, it is estimated that its theoretical strength is $\sim 10 \text{ kg/mm}^2$. By comparison with the earlier results, it is concluded that the strength of the investigated polycrystalline ammonia was 15 times lower than theoretical. Orig. art. has: 1 figure and 2 formulas.

SUB CODE: 20/ SUBM DATE: 21Jul65/ ORIG REF: 002/ OTH REF: 003

Card 2/2 ULR

YEFIMENKO, Ye.I.; PROKHVATILOV, A.Ya.

Advanced work methods to be made available to every worker. Khim.-
volok. no.2:61-63 '63. (MIRA 16:5)

1. Kamenskiy kombinat iskusstvennogo volokna.
(Textile workers—Education and training)

PROKHVATILOV, I.G., teknik

Improved contactor. *Energetik* 8 no. 12:24-25 D '60.

(MIRA 13:12)

(Electric contactors) (Electric motors)

TITKOV, I.; PROKHVATILOV, V.

Zero stage in ship repairs. Mor. flot 22 no.5:31 Ky '62.

(MIRA 15:5)

1. Zamestitel' nachal'nika planovo-proizvodstvennogo otdela
Nakhodkinskogo sudoremontnogo zavoda (for Titkov). 2. Nakhodinskiy
sudoremontnyy zavod (for Prokhvatilov).

(Merchant ships--Maintenance and repairs)

FROKHVATILOV,

28927

V.G. igindin, yoh. i. raebornaya ionnaya ryentgyenovskaya trubka dlya strukturnogo analiea. Eavodskaya laboratoriya, 1949, No. 9, c. 1071-74.--Bibliogr: 7 Naev

So: Letopis' No. 34

PROKHAVILOV, V.A.

24(0)

PHASE I BOOK EXPLOITATION SOV/1180

Vsesoyuznaya konferentsiya po fizike dielektrikov, Dnepropetrovsk, 1956.

Fizika dialektrikov; trudy konferentsii... (The Physics of Dielectrics; Transactions of the All-Union Conference on the Physics of Dielectrics) Moscow, Izd-vo AN SSSR, 1958. 245 p. 3,000 copies printed.

Resp. Ed.: Skanavi, G.I., Doctor of Physical-Mathematical Sciences; Ed.: Filipova, K.V., Candidate of Physical-Mathematical Sciences; Ed. of Publishing House: Starokadomskaya, Ye.L.; Tech. Ed.: Astaf'yeva, G.A.

Sponsoring Agencies: Akademiya nauk SSSR. Fizicheskiy institut, and Dnepropetrovsk. Universitet.

PURPOSE: This book is intended for scientific research workers, professors, industrial engineers and laymen who are interested in the study and use of dielectrics and dielectric materials.

COVERAGE: This volume publishes reports presented at the All-Union Conference on the Physics of Dielectrics, held in Dnepropetrovsk in August 1956, sponsored by the "Physics of Dielectrics" Laboratory of the Fizicheskiy institut

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The Physics of Dielectrics (Cont.)

SOV/1180

imeni Lebedeva AN SSSR (Physics Institute imeni Lebedev of the AS USSR), and the Electrophysics Department of the Dnepropetrovskiy gosudarstvennyy universitet (Dnepropetrovsk State University). The present collection presents reports and discussions under the following subject headings: a) the influence of radiation on the properties of dielectrics; b) electro-and photoconductivity of dielectrics; c) methods of measuring dielectric properties; and d) practical uses of dielectrics. Abstracts of reports dealing with dielectric polarization and losses, dielectric disruption, electrets and corresponding materials published in "Izvestiya AN SSSR, seriya fizicheskaya", Nrs 3 and 4, 1958 are included. The editors state that reports submitted for publication, but for some reason not presented at the conference, were not included because of lack of space. References are given at the end of each conference report.

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CA

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Demountable ionic x-ray tube for structural analysis.
V. G. Prokhvatilov and E. I. Gindin. *Zavodskaya Lab.*
15, 1071-4(1949).—The cathode-anode distance can be
varied from 70 to 90 mm., and the anode-window distance is
9 mm. The tip of the anode is a tetragonal pyramid, each
face consisting of a different metal. Focusing is accom-
plished with a deep-cup cathode and can be controlled from
the outside. Most necessary adjustments can be made
without breaking the vacuum. Cyrus Feldman

ПРОКХВАТИЛОВ В. Г.

5

Journal of the Iron and Steel Institute
Vol. 176
Apr. 1954
Metallography

2
Vacuum High-Temperature Camera for X-Ray Structural Analysis. V. G. Prokhtilov and E. I. Gindin. (Zavodskaya Laboratoriya, 1950, 16, (8), 985). [In Russian]. The convenient and simply operated vacuum camera described enables specimens to be heated up to 500° C, a vacuum of 10⁻⁴ mm. Hg being maintained.—s. k.

PROKHVATILOV, V. G.

PA 187T97

USSR/Physics - X-ray Tube

Mar/Apr 51

"Small-Size Ionic Sectional (Dismountable) X-ray Tube for Structural Analysis," V. G. Prokhvatilov, Ye. I. Gindin

"Iz Ak Nauk SSSR, Ser Fiz" Vol XV, No 2, pp 277, 278

Subject tube operates up to 10 ma at 30 kv. At loads higher than 12 ma the cementing material begins to soften and indications of deterioration of the vacuum are observed. Gives schematic diagram of the tube. Lecture read at 3d All-Union Conference on Use of X-rays in Study of Materials held 19 - 24 Jun 50 in Leningrad.

LC

187T97

PROKHVATILOV, V. G.

11 Sep 52

USSR/Chemistry - Manganese Compounds

"Structural Study of the $\text{CuO} - \text{Mn}_2\text{O}_4 - \text{O}_2$ System," Ye. V. Kurlina, V. G. Prokhvatilov, I. T. Shafitel'

"Dokl Ak Nauk SSSR" Vol 26, No 2, pp 305-307

Between the temps 500-1,100°, the compd CuMn_2O_4 forms, which has a spinel structure. Between 1,000 and 1,100°, when the CuO content is increased, the solid soln CuMn_2O_4 is formed lat. When the critical concn is reached, the material consists of a solid soln of CuMn_2O_4 in Mn_2O_4 and spinel. Presented by Acad D. S. Belyankin 12 Jul 52

PA 235T24

Prokhatikov, V. S.

10/8/50

The oxides of titanium. N. P. Bogaroditskii, I. E. Zelenkova, V. G. Prokhatikov, and I. D. Krilberg. Dokl. Akad. Nauk S.S.S.R. 104: 643-5 (1956). The titanates of Mg, Ca, Zn, Sr, Cd, Ba, Al, Zr, Pb, Fe, and Ni are of particular interest because of their high dielec. consts. The following systems were investigated: MO-SiO₂-TiO₂ and MO-Al₂O₃-TiO₂ (M = the above metals) by synthetic methods of solid state reactions in the temp. range from 1200° to 1450°. The ceramic bodies (shaped as disks) were measured in their dielec. consts., ϵ , and $\tan \delta$ (loss angle). New compds. found were: CaO-Al₂O₃-2TiO₂; BaO-Al₂O₃-2TiO₂; BaO-SiO₂-TiO₂. The complex titanate CaO-Al₂O₃-2TiO₂ has a neg. temp. coeff. of the dielec. const. like rutile. The Ba sphene, BaO-SiO₂-TiO₂, has a fusion point of only about 1200° and can, therefore, be used as a flux for ceramic materials used in radiotechniques. A chem. classification of the titanates is as follows: metatitanates, AlTiO₃; dititanates, Mg₂TiO₅; orthotitanates, 2MO.TiO₂; silicotitanates like ramsayite, sphene, Ba sphene, benitoite, leucosphenite, etc.; aluminotitanates, e.g. Al₂O₃.TiO₂; CaO-Al₂O₃-2TiO₂; BaO-Al₂O₃-2TiO₂. W. Bintl.

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Prakhvatilov, V. G.

4910

THE PHYSICO-CHEMICAL AND ELECTRICAL PROPERTIES OF THE $TiO_2 - ZrO_2$ SYSTEM. Ya. M. Ksendrov and V. G. Prakhvatilov. *Zhur. Tekh. Khim.* 31, 320-7 (1957)

Feb. (in Russ.)

Investigations revealed that the $ZrTiO_4$ compound, and solid solutions of rutile and ZrO were formed at the boundaries of the $TiO_2 - ZrO_2$ system. At $400^\circ C$ the solid solution of rutile was found between 11 and 12 mole % of ZrO_2 , while hexagonal ZrO was present at ~15% TiO_2 .

With the increase of temperature, the solid solution boundaries shifted towards higher solute concentrations. The electrical properties of the $TiO_2 - ZrO_2$ system were studied. For the compound $ZrTiO_4$, the value of ϵ was 39, and the temperature coefficient was 110×10^{-6} (per cent).

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PROKHVATILOV, V.G.

SKANAVI, G.I.; KSENDZOV, Ya.M.; TRIGUBENKO, V.M.; PROKHVATILOV, V.G.

Nonferroelectric dielectric substances with high permittivity.
Izv. AN SSSR. Ser. fiz. 22 no.3:235 Mr '58. (MIRA 11:4)

1. Fizicheskiy institut im. P.N. Lebedeva Akademii nauk SSSR.
(Dielectrics)

Prokhalatilov, V. G.

AUTHORS: Gindin, Ye. I., Prokhalatilov, V. G.

32-1-42/55

TITLE: A Device for Taking X-Ray Pictures at High Temperatures
(Prisposobleniye dlya vysokotemperaturnykh rentgenovskikh "yemok").

PERIODICAL: Zavodskaya Laboratoriya, 1958, Vol. 24, Nr 1, pp. 106-107 (USSR)

ABSTRACT: In the present paper an additional device for the camera intended for taking pictures of pulverized polycrystalline substances at high temperatures (up to 1500^o) is suggested. The powder of the substance to be investigated is applied on to a platinum wire of about 0.2 mm diameter. The suitable temperature is maintained by allowing the current to pass through this wire. The device consists of two suitably shaped brass plates, which are connected by a shaft. Between these plates a platinum wire is drawn in such a manner that one of its ends is made fast and the other is connected to a movable rod with a spring. This rod rests in two bearings of insulation material. The current is fed by 2 elastic lines in such a manner that one of them is connected to the connecting shaft of the device and the other to the free end of the movable rod; for reasons of safety this line is caught by an insulator which is

Card 1/2

A Device for Taking X-Ray Pictures at High Temperatures

32-1-42/55

fastened to one of the brass plates. The device is placed upon a steel rod in such a manner that the axis of this rod and that of the platinum wire is the same. The rod serves as a holder for the device with the sample and is fastened in the X-ray camera accordingly. Because of the automatic control of the necessary current a current stabilizer, an autotransformer, and a step-down transformer are provided (220/10). A small motor is connected here in order that the sample moves at not full revolutions (backwards and forwards). Temperature is measured according to the linear modulus of extension of the platinum wire (as per table). There is 1

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1. X-ray cameras-Adaptors

S/032/60/026/04/36/046
B010/B006

AUTHORS: Prokhvatilov, V.G., Gindin, Ye.L.

TITLE: Specimen Holder for the Apparatus of the Type URS-501

PERIODICAL: Zavodskaya laboratoriya, 1960, Vol. 26, No. 4, p. 499

TEXT: Since the holders of the URS-501 apparatus turned out to be unsatisfactory, several new types of specimen holders were designed and tested. The most suitable holder is described in the present paper (Fig.). The specimen is fixed at one end of a horizontal bar and pressed against a support by a spring. The other end of the bar is connected to an electric motor, so that the specimen can be rotated slowly while photographing. A small chamber is used for investigating powdered specimens. The specimen is adjusted to the goniometer axis by means of a screw and a step bearing. In a footnote the editors point out the fact that the holder described has the disadvantage of providing no protection against scattered X-rays. There is 1 figure.

Card 1/1

ROTENBERG, B.A.; DANILYUK, Yu.L.; GINDIN, Ye.I.; PROKHVATILOV, V.G.

Electrophysical and microwave spectroscopic studies of barium
titanate doped with oxides of trivalent elements. Fiz. tver.
tela 7 no.10:3048-3053 O '65. (MIRA 18:11)

L 10582-66 EWT(m)/EWP(t)/EWP(b) IJP(c) JD

ACC NR: AP5025385

SOURCE CODE: UR/0181/65/007/010/3048/3053

AUTHOR: Rotenberg, B. A.; Danilyuk, Yu. L.; Gindin, Ye. I.; Prokhvatilov, V. G. 69

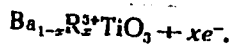
ORG: none

TITLE: Electrophysical and microwave spectral study of barium titanate with admix-
tures of oxides of trivalent elements 27

SOURCE: Fizika tverdogo tela, v. 7, no. 10, 1965, 3048-3053

TOPIC TAGS: barium titanate, solid solution, electron paramagnetic resonance, micro-
wave spectroscopy, oxide, semiconductor research, crystal lattice defect, electric
conductivity, polycrystal

ABSTRACT: The authors study some of the electrical properties and the structure as
well as paramagnetic resonance absorption of polycrystalline barium titanate with
small admixtures of oxides of trivalent elements. Preparation of the specimens is
briefly described together with an explanation of the experimental methods and equip-
ment used. Paramagnetic resonance absorption was measured at 9320 Mc and 78°K. It
is experimentally established that there are four possible types of solid solutions
in BaTiO₃-R₂O₃ systems. 1. A solid solution of substitution in the barium ion sub-
lattice with the formation of weakly bound electrons (donor levels)

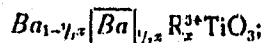


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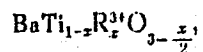
L 10582-66

ACC NR: AP5025385

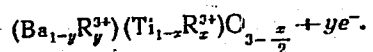
Solid solutions of this type have high electrical conductivity. 2. A solid solution of substitution with subtraction in the barium ion sublattice



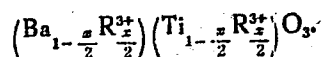
in this case, the lattice is neutral due to barium vacancies, and the specimens are dielectrics. 3. A solid solution of substitution in the titanium sublattice



where it is most natural to assume that electric neutrality of the lattice in the case of oxide semiconductors is due to oxygen vacancies formed during annealing, and electrical conductivity does not increase. 4. A more complex solid solution of substitution in both sublattices with the formation of oxygen vacancies and donor levels



An increase in electrical conductivity is possible in this case. When $x=y$, electric neutrality may be maintained without the formation of oxygen vacancies and donor levels according to the formula



Other cases are also possible if the alloying additive has variable valence. It is

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ACC NR: AP5025385

shown that electrical conductivity is related to impurity concentration through changes in the type of solid solution formed during annealing of barium titanate with impurities in concentrations of 0.1-0.3 mol %. The experimental data indicate that the same types of defects are formed by reduction of the ceramic and by alloying. It is possible that these are not single-electron defects or defects of odd order in general. This hypothesis agrees with the conclusions made by other researchers. Orig. art. has: 4 figures.

SUB CODE: 20,07/

SUBM DATE: 30Jan65/

ORIG REF: 002/

OTH REF: 008

Card 3/3 / 20

L 42402-65
 EWP(b)/EWA(c) Pr-4/Pad/Ps-4/Pi-4 IJP(c) JD/HW/LHB/GG S/0070/65/010/002/0248/0250
 ACCESSION NR: AP5008472

50
B

AUTHOR: Prokhvatilov, V. G.; Gindin, Ye. I.

TITLE: Tetragonal spinels in the $CoO-MnO-O_2$ system

SOURCE: Kristallografiya, v. 10, no. 2, 1965, 248-250

TOPIC TAGS: cobalt compound, manganese compound, spinel, x-ray crystallography, tetragonal spinel, crystal lattice distortion

ABSTRACT: The specimens for this study were prepared by Ye. V. Kurlina by joint alkaline precipitation of manganic and cobaltic hydroxides from manganous and cobaltous nitrates with subsequent drying at 80° and roasting at 1000-1200°C. A metallography of the specimens with a the radiation source.

of 0.5:1, CoMn_2O_4 is
This indicates that the compound is a tetragonal

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ACCESSION NR: AP5008472

intermediate between MnCo_2O_4 and CoMn_2O_4 give x-ray patterns which differ considerably from Mn_3O_4 and from a cubic spinel. These intermediate compounds are found to be tetragonal spinels with various degrees of tetragonal distortion of the MnO_6 octahedra. Distortion increases with the content of Mn, reach-

investigated are given in tabular form. Orig. date used: 6-28-64

ASSOCIATION: none

SUBMITTED: 28Jun64

ENCL: 00

SUB CODE: SS

NO REF SOV: 002

OTHER: 005

ce
Card 2/2

S/081/62/000/012/038/063
B166/B101

AUTHORS: Amirova, S. A., Pechkovskiy, V. V., Prokhorova, V. G.,
Derendyayeva, M. P.

TITLE: Development of a new production process for the extraction
of vanadium from converter slags

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 12, 1962, 384, abstract
12K76 (Sb. nauchn. t. Permsk. politekhn. in-t, no. 10,
1961, 131-137)

TEXT: The production process includes the following main stages:
oxidizing roasting of the converter slag without alkaline additions with
the object of converting the V into acid-soluble compounds; the extraction
of the V from the oxidized slag with H_2SO_4 solutions, and the precipita-
tion of V from the lyes with a view to obtaining commercially pure V_2O_5 .
The optimum conditions for the oxidizing roasting of an ungranulated slag
without additions are a temperature of $850^{\circ}C$ and a roasting duration of

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Development of a new production ...

8-10 hours. When this is done, 93-95% of the V is extracted from the slag in the form of acid-soluble compounds. The use of a granulated slag enables the roasting temperature to be raised to 950°C and the duration of roasting to be reduced to 7 hours. Two versions of leaching out the slag roasted without alkaline additions are proposed. [Abstracter's note: Complete translation.]

Card 2/2

PROKHVATILOV, V.G.; GINDIN, Ye.I.

Sample holder for the URS-50I diffractometer. Zav.lab.
no.4:499 '60. (MIRA 13:6)
(Spectrometer)

ROYAK, S.M., kand.tekhn.nauk; PROKHAVILOVA, I.A., inzh.

Structure and properties of calcium germanates. Trudy NIITsment
no.17:76-84 '62. (MIRA 16:5)

(Calcium--Germanates)

15(2).

SOV/72-59-11-10/18

AUTHORS:

Bogoroditskiy, N. P., Polyakova, N. L., Eydel'kind, A. M.,
Prokhvatilov, V. G., Petrova, V. P.

TITLE:

Wollastonite Raw Materials for the Ceramics Industry

PERIODICAL:

Steklo i keramika, 1959, Nr 11, pp 32-38 (USSR)

ABSTRACT:

In the Tadzhikskaya and Uzbekskaya SSR, rich deposits of this mineral have recently been found. Wollastonite $\text{CaO}\cdot\text{SiO}_2$ consists of 48.25% CaO and 51.75% SiO_2 . As can be seen from the paper by D. S. Belyankin, V. V. Lapin, N. N. Toropov (Footnote 1), K. K. Kolobova in 1941 investigated the system CaO-SiO_2 . Wollastonite has hitherto not been used in Soviet industry. The authors of the present paper studied the wollastonite rocks of the following three deposits: Kansay (Tadzhikskaya SSR), Lyangar (Uzbekskaya SSR), and Kalkkitekhdashskiy (Leningrad oblast'). According to the papers by M. Z. Kantor, V. P. Petrov (Footnote 2), this rock contains small quantities of diopside, garnet, quartz, and calcite. The chemical analysis of the wollastonite rocks of the three deposits is given in table 1. The results of the radiographical and microscopical

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Wollastonite Raw Materials for the Ceramics Industry

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investigations, as well as the investigation of the electric conductivity, are listed in table 2 for natural wollastonite, and in table 3 for synthesized wollastonite. Table 1 shows the dependence of the inclination tangent of the dielectric losses on the burning temperature of the raw materials. Figures 2-5 show microphotographs of wollastonite rocks and synthesized wollastonite, while figures 6-8 show X-ray pictures of these wollastonites. Furthermore, the electric and physico-mechanical properties of radioceramic materials made of wollastonite are given. Figure 9 represents the results of comparative examinations of the heat resistance of samples of steatite material and wollastonite. As can be seen from these results, the heat resistance of the wollastonite samples is much higher. Investigations showed that the wollastonite rocks from the Kansay and Lyangar deposits can be used as a raw material for the production of electrotechnical and other types of ceramics. There are 9 figures and 3 references, 2 of which are Soviet.

Card 2/2

AMIROVA, S.A.; PRCHKOVSKIY, V.V.; PROKHOROVA, V.G.; POLOTNYANSHCHIKOVA, M.I.

Studying the oxidizing and chloridizing roasting of vanadium
slag. Nauch.dokl.vys.shkoly; khim. i khim.tekh. no.2:398-
401 '59. (MIRA 12:8)

1. Predstavlena kafedroy tekhnologii neorganicheskikh veshchestv
Permskogo gosudarstvennogo universiteta im. A.M.Gor'skogo.
(Vanadium--Metallurgy) (Ore dressing)

VEREHEYCHIK, N.M.; GINDIN, Ye.I.; ODELEVSKIY, V.I.; PROKHVATILOV, V.G.

New modification of crystalline magnesium metasilicate. Zhur.
neorg. khim. 4 no.3:535-542 Mr '59. (MIRA 12:5)
(Magnesium silicates) (Phase rule and equilibrium)

5(2)

SOV/78-4-3-8/34

AUTHORS:

Verebeychik, N. M., Gindin, Ye. I., Odelevskiy, V. I.,
Prokhvatilov, V. G.

TITLE:

New Modification of the Crystalline Magnesium Metasilicate
(Novaya modifikatsiya kristallicheskogo metasilikata magniya)

PERIODICAL:

Zhurnal neorganicheskoy khimii, 1959, Vol 4, Nr 3,
pp 535-542 (USSR)

ABSTRACT:

The existence of the δ -modification of magnesium metasilicate has been discovered by the thermal decomposition of talc. Investigations of the X-ray structure have shown that the δ -phase distinguishes distinctly from protoenstatite. The existence of δ - $MgSiO_3$ has been confirmed by comparative investigations of the refraction indices, the density and the mechanical stability of the various modifications. The thermodynamical stability of the δ -phase was investigated at 900° . In the absence of mineralizers the δ -phase is stable up to $1400^\circ C$. The δ -modification of $MgSiO_3$ can be used for the production of non-aging steatite. There are 3 figures, 3 tables, and 16 references, 7 of which are Soviet.

Card 1/2

PROKHVATILOV, V.G.

AUTHORS: Skanavi, G. I., Ksendzov, Ya. M., 48-22-3-1/30
Trigubenko, V. M., Prokhvatilov, V. G.

TITLE: Non-Piezoelectric Dielectrics With High Dielectric
Constant (Nesegnetoelektricheskiye dielektriki s vysokoy
dielektricheskoy pronitsayemost'yu).
Abridged Contents of the Report. . - The Complete Article
is Published in ZhEFT, 1957, Nr 33, p. 320 (Kratkoye
soderzhaniye doklada, podrobnaya stat'ya opublikovana
v ZhETF, 33, 320 (1957)).

PERIODICAL: Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, 1958,
Vol. 22, Nr 3, pp. 325-235 (USSR)

ABSTRACT: As is known, the fundamental properties of piezoelectrics
are correlated with the spontaneous polarization within
the temperature-range below Curie point. It follows from
the conditions of thermodynamic equilibrium that the die-
lectric constant in the Curie point corresponding to the
phase transition attains very high (theoretically infinite).
There is, however, a possibility of increasing the dielec=
tric constant of the solid dielectrics at the expense of

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Non-Piezoelectric Dielectrics With High Dielectric Constant. 48-22-3-1/30
Abridged Contents of the Lecture. - The Complete Article is Published in
ZhETF, 1957, Nr 33, p. 320

relaxation ionization which is caused by the relatively marked displacement of the ions and which is not correlated with the phase transition at Curie point. The combination of the considerable ion displacements with a local field favorable to polarization in the lattice of the type "perovskite" may result in an excessively high dielectric constant without piezoelectric properties. The experimentally found values show that the loosening of the lattice of the type "perovskite" (strontium titanate, solid solutions of strontium titanate and lead-titanate, barium titanate) by means of a part-substitution of the bivalent cations by cations of high valence (bismuth, cerium) without structural change and with low conductivity results really in an important increase of the dielectric constant (up to several thousands). The dependence of the ϵ and of $\text{tg}\delta$ on the temperature apparently indicates the relaxation character of polarization. The elaboration of the experimental values by applying the hypothesis on relaxation ionic polarization

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Non-Piezoelectric Dielectrics With High Dielectric
Constant. Abridged Contents of the Report. The
Complete Article is Published in ZhETF, 1957, Nr 33,
p. 320

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makes it possible to estimate a series of values charac-
terizing the process of polarization. Results show that
the fundamental hypothesis agrees with the experimentally
obtained data and that it is not contrary to the phenome-
nological theory. The substitution of the bivalent cations
in the lattice of the type of "perovskite" by cations
high valence leads to the formation of solid solutions of
the deduction type. In this case it follows from the con-
dition of the electric neutrality of the lattice that empty
nodes must be formed in the cation part of the lattice. The
intensity of the lines on Debye samples decreases equally
according to the rules governing the process. It may be
assumed that the empty nodes are formed at the expense of
the bivalent cation (strontium or barium). The presence
of empty nodes and trivalent cations in the lattice of the
"perovskite" type must lead to a distortion of the oxygen
octahedron surrounding the titanium-ion and consequently to
a greater liberty of its translocation. Consequently, a re=

Card 3/4

Non-Piezoelectric Dielectrics With High Dielectric Constant. Abridged Contents of the Report. - The Complete Article is Published in ZhETF, 1957, Nr 33, p. 320 48-22-3-1/30

laxation polarization which increases the dielectric constant, can be superimposed over the ordinary elastic (electron and ion) polarization.

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva Akademii nauk SSSR (Institute of Physics imeni P. N. Lebedev, AS USSR)

AVAILABLE: Library of Congress

1. Dielectrics--Properties

Card 4/4

PROKHAVATILOV, Ye.I.

Machine for milling bevel gears. Avt. prom. 27 no. 4:43 Ap '61.
(MIRA 14:4)

1. Nauchno-issledovatel'skiy tekhnologicheskiy institut avtomobil'-
noy promyshlennosti. (Metalworking machinery)

SOV/137-58-11-22732

Translation from: Referativnyy zhurnal. Metallurgiya, 1958, Nr 11, p 128 (USSR)

AUTHORS: Gorodnov, P. T., Baranov, A. K., Antonova, Yu. S., Prokhvatilov,
Ye. I., Skvortsov, G. D.

TITLE: Condenser-discharge Welding of Bicycle Frames (Kondensatornaya
svarka velosipednykh ram)

PERIODICAL: Tekhnol. avtomobilstroyeniya, 1958, Nr 2, pp 36-43

ABSTRACT: The novel technological process of condenser-discharge welding (CW) of permanently joined members of bicycle frames developed by the NIITavtoprom (Scientific Research Institute of Technology for the Automobile Industry) substantially reduces the amount of labor required as well as the weight of the bicycles. The employment of the CW significantly reduces the consumption of ferrous and nonferrous metals and auxiliary materials and eliminates such operations as the manufacture of fittings, their attachment, etc. The electrical circuitry of CW is examined. Technical specifications and photographs of the CW machine are given. At a current of up to 300,000 amp the productivity of the machine amounts to 100-125 welding operations per hour. As a result of investigations carried out to

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SOV/137-58-11-22732

Condenser-discharge Welding of Bicycle Frames

determine optimal conditions for CW, relationships were established between the strength of the welded joints and the current density, the charge potential, the compression force, the overhang of the pipe, etc. (the data are compiled in the form of diagrams). Vibration-strength tests yielded favorable results. A prototype of an industrial CW machine was designed and constructed. The employment of the CW technique reduces the labor from 41-44 to 5-15 minutes per frame and lowers the cost of manufacture per frame from 12-13 to 5-7 rubles.

B. K.

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S/020/61/141/004/009/019
B103/B101

AUTHORS: Royak, S. M., and Prokhvatilova, I. A.

TITLE: Calcium germanates and their properties

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 141, no. 4, 1961, 880 - 883

TEXT: The studies concerned dicalcium germanate ($2\text{CaO}\cdot\text{GeO}_2$ denoted as C_2Ge) and the possibility to form tricalcium germanate ($3\text{CaO}\cdot\text{GeO}_2 = \text{C}_3\text{Ge}$) which is analogous to tricalcium silicate ($3\text{CaO}\cdot\text{SiO}_2 = \text{C}_3\text{S}$). Synthesis was effected by mixing finely pulverized CaCO_3 and GeO_2 in ratios of 2:1 and 3:1. The mixture moistened with 8 - 10% of water was pressed into prisms of 1 x 1 x 3 cm which were burned on platinum in the silit furnace: (1) C_2Ge at 1400°C ; (2) C_3Ge at 1500°C . C_2Ge was burned under conditions corresponding to those of the synthesis of belite: gradual heating up to 1400°C and keeping of this temperature for 3 hr; then the sample is

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Calcium germanates and ...

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quenched (a) by immersion into water or (b) by air of 0°C, crushed, formed again to prisms and reburned. This was repeated until Ca was completely bound and a homogenous monomineral formed. The total burning time was in case (a) 6 hr; in case (b) 9 hr. The C₂Ge synthesized is soluble in 5% solution of boric acid like C₂Si (method of E. I. Nagerova, Tr. 3 Vsesoyuzn. soveshch. zavodskikh laboratoriy tsementnoy promyshlennosti, 1945). A microscopic examination showed that the crystal-optical properties of C₂Ge are similar to those of β-C₂Si. The interplanar spacings of these two compounds were found to agree rather well (on the basis of radiograms and thermograms). These two minerals were subjected again to the above-mentioned treatment and mixed with water. The paste prepared hardened. It was found that burning of the 3CaO·GeO₂ mixture yields first C₂Ge which combines subsequently at elevated temperature with the free Ca to form C₃Ge. During the burning the temperature was gradually increased up to 1500°C and then kept for 4 hr. The product

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Calcium germanates and ..

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was quenched in air and then subjected again to the treatment mentioned. After three or four such burnings a homogeneous product was formed. Burning for 12 - 16 hr at 1500°C results in monomineral C_3Ge which is a rather solid light green-yellowish sinter. The crystal-optical properties of C_3Ge and C_3Si are similar. When C_3Ge is reburned at 1500°C and cooled gradually, it decomposes partly to C_2Ge and CaO (proved by the refractive indices $n_q = 1.734$; $n_p = 1.700$). The C_2Ge grains are hexagonal and oval. The mineral $3CaO \cdot GeO_2$ was identified radiometrically in the C_3Ge synthesized; CaO and SiO_2 lines were absent. The high-temperature thermogram of C_3Ge shows an endoeffect at 456°C which is explained by the loss of the hydrate water on the surface of the CaO grains. The effect at 743°C is attributed to the beginning conversion to C_2Ge which is proved by two intensive endoeffects at 1360 and 1454°C. Also C_3Ge dissolves completely in a 5% solution of boric acid. C_3Ge crushed and
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Calcium germanates and ...

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prepared with water binds within 15 min. Thus, the existence of C_3G_2 ,
an analogue to C_3Si was experimentally proved. There are 4 figures
2 tables, and 7 references: 6 Soviet and 1 non-Soviet. The reference
to the English-language publication reads as follows: W. L. W. Ludekens
J. Inorg. and Nucl. Chem., 3, 281 (1956).

PRESENTED: July 15, 1961, by S. I. Volkovich, Academician

SUBMITTED: July 13, 1961

Card 4/4

ROYAK, S.M.; PROKHAVILOVA, I.A.

Calcium germanates and their properties. Dokl. AN SSSR 141 no.4:
880-883 D. 161. (MIRA 14:11)

1. Predstavleno akademikom S.I. Vol'fkovichem.
(Calcium germanate)