SKLYAROV, Aleksey Yeliseyevich, inzh.; ALEKSANDROV, Konstantin Borisovich, kand.tekhn.nauk, dotsent

Choice of the parameters of an impulse voltage for testing the insulation of winding sections of electric traction motors. Izv. vys. ucheb. zav.; elektromekh. 6 no.5:582-591 '63.
(MIRA 16:9)

1. Nachal'nik otdela novykh metodov izmereniy novocherkasskogo nauchno-issledovatel'skogo instituta elektrovozostroyeniya (for Sklyarov). 2. Kafedra teoreticheskikh osnov elektrotekhniki Leningradskogo instituta inzhenerov zheleznodorozhnogo transporta (for Aleksandrov).

(Electric railway motors)

S/151/60/000/003/001/002
B012/B060

AUTHOR: Aleksandrov, K. I.

TITLE: Zone of Oxidation of the Pervomayskoye Molybdenum Deposit
              (Buryatskaya ASSR)

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Geologiya i razvedka,
              1960, No. 3, pp. 59-74

TEXT: The papers by M. M. Besova (Ref. 1), N. A. Smol'yaninov (Refs. 8,9),
and M. M. Povilaytis concerning the Dzhidinskoye ore field hardly deal at
all with the distribution of the minerals in the oxidation zone and its
morphology. The author studied these problems in 1956-1957 and now gives
his results. Almost all the modern research methods were applied in these
studies. The X-ray pictures were taken at the Irkutskiy institut redkikh
metallov (Irkutsk Institute of Rare Metals) by A. V. Sharonova, while the
chemical analyses were made by V. M. Shcherbakova and L. R. Mil', coworkers
of the same Institute. In the Pervomayskoye molybdenum deposit in the
Dzhidinskoye ore field the ore mineralization is connected with the apex
of the stock of granite-porphyries of the Cimmerian intrusive cycle and is

Card 1/3

Zone of Oxidation of the Pervomayskoye
Molybdenum Deposit (Buryatskaya ASSR)

S/151/60/000/003/001/002
B012/B060

traced back to the Cambrian by way of the biotite-amphibole slates and
hornstones containing the said stock. The molybdenum mineralization of this
deposit is represented by stockwork types, disseminated and vein types.
The main hypogene minerals of these ores, upon which the formation of
secondary products in the zone of oxidation was based, are pyrite,
molybdenite, chalcopyrite, galenite, hübnerite, rhodochrosite, fluorite,
and feldspars (microlite and albite). The most important and most widely
spread hypergene mineral is jarosite, and less widely spread are ferric
hydroxides, and, still less, ferrimolybdite and powellite. Summing up:
1) Under relatively stable geochemical conditions one may write the
following succession in the formation of hypergene minerals in the
oxidation zone of the Pervomayskoye molybdenum deposit: molybdenite -
powellite, ferrimolybdite, molybdenum-containing limonite, limonite;
galenite - anglesite, cerussite, wulfenite; chalcopyrite - bornite,
chalcosine, covellite, azurite, malachite; pyrite - jarosite, limonite;
rhodochrosite - manganite, psilomelane, pyrolusite. 2) As to oxidation
intensity, three molybdenum ore types can be singled out here: a sulfidic
one, with a relative MoO_3 content of 0-20%, a sulfide-oxidized one with

Card 2/3

Zone of Oxidation of the Pervomayskoye   S/151/60/000/003/001/002
Molybdenum Deposit (Buryatskaya ASSR)   B012/B060

a MoO_3 content of 20-30%, and an oxidized ore type with a MoO_3 content of
over 30% of the total molybdenum content. The first and, in part, the
second ore type are so far important industrially. 3) The spreading of the
three types in horizontal and vertical direction is irregular. At the
same time, the intensity of ore oxidation decreases with depth until, at
a depth of 50 m, the ore is almost not oxidized at all. The zone of
oxidation of the Pervomayskoye deposit has formed beginning from the
Mesozoic to the present time. Papers by N. A. Smolyaninov and Ye. N.
Isakov (Ref. 9), V. A. Obruchev (Ref. 6), and reports by Ye. N. Smolyanskiy
are mentioned. There are 10 figures, 8 tables, and 16 Soviet references.

ASSOCIATION: Irkutskiy gorno-metallurgicheskiy institut (Irkutsk
               Institute of Mining and Metallurgy)

Card 3/3

ALEKSANDROV, K.I.

Lithologic composition of the Orlovka series and palegeographic conditions governing its formation. Trudy Gor.-geol. inst. UFAN SSSR no.51:137-153 '60.   (MIRA 13:9)
        (Ural Mountains--Geology, Stratigraphic)

ALEKSANDROV, K.I.;   GOL'BERT, A.V.

Origin of manganese ores in the Yashka limestone deposit. Geol.
i geofiz. . no.1:115-117 '61.   (MIRA 14:5)

1. Sibirskiy nauchno-issledovatel'skiy institut geologii,
geofiziki i mineral'nogo syr'ya, Novosibirsk.
              (Bol'shaya Yashaa—Manganese ores)

ALEKSANDROV, K.I

AUTHOR: Aleksandrov, K.I.   68-1-18/21

TITLE: Organisation of Repairs and Maintenance on the Zhdanov
         Coke Oven Works. (Organizatsiya remontnogo khozyaystva
         na Zhdanovskom Koksokhimicheskom Zavode)

PERIODICAL: Koks i Khimiya, 1957, No.1, pp. 57 - 61 (USSR)

ABSTRACT: The organisation of repairs and maintenance section on
         the above works is described. Characteristic feature of the
         organisation is the large number of engineers employed.

ASSOCIATION: Zhdanov . . Coke Oven Works (Zhdanovskiy Koksokhimi-
              cheskiy Zavod)

AVAILABLE: Library of Congress

Card 1/1

AUTHOR: Aleksandrov, K. I.   68-58-4-14/21

TITLE: A Rational Scheme of Coke Screening (Ratsional'naya
          skhema koksosortirovki)

PERIODICAL: Koks i Khimiya, 1958, Nr 4, pp 50-51 (USSR)

ABSTRACT: The reconstruction of the coke screening plant and
          conveying system on the Zhdanov Works is described
          and illustrated. The new scheme improved the availability
          of the plant and decreased the height of the fall of
          coke during charging into wagons by 4 1/2 m.
          There are 3 figures.

ASSOCIATION: Zhdanovskiy koksokhimicheskiy zavod
          (Zhdanov Coke Oven Works)

          1. Coke--Processing   2. Coke--Handling   3. Industrial plants--Con-
          struction

Card 1/1

SOV/68-58-12-13/25

AUTHOR: Aleksandrov, K.I.

TITLE: A New Method of Vulcanisation of Joints of Conveyor
            Belts (Novyy sposob vulkanizatsii stykov transporter-
            nykh lent)

PERIODICAL: Koks i Khimiya, 1958, Nr 12, pp 46-49 (USSR)

ABSTRACT: Joining of conveyor belts (overlapping joints) by
            vulcanisation according to adopted practice (shown in
            Fig 1) required 8-10 hours and therefore was seldom used.
            In 1956 a new method of joining not by overlapping but
            by interlocking of the individual belt layers (Fig 2)
            was developed. The ends of the belts to be joined are
            cut at 90° and heated by vulcanisation plates to
            100-110°C. At this temperature the separation of layers
            is easy, but it also can be carried out on cold using a
            special tool shown in Figs 3 and 4. The length of the
            interlocking joint is 600-700 mm as against 2100 mm of
            the overlapping joint previously used. The results of

Card 1/2

SOV/68-58-12-13/25

A New Method of Vulcanisation of Joints of Conveyor Belts

tests of conveyors joints made by the old and new
methods are shown in the table.   The new method is
more economical in labour, materials and gives longer
service.
There are 4 figures and 1 table.

ASSOCIATION: Zhdanovskiy koksokhimicheskiy zavod (Zhdanov
Coking Works)

Card 2/2

SOV/68-59-8-7/32

AUTHOR: Aleksandrov, K.I., Shevchenko, A.I. and
            Nepomnyashchiy, I.L.

TITLE: From Experience of Operation of the Machine for the
            Removal of Covers from Charging Holes Designed by the
            Bureau for Coke Oven Machine Building (Opyt
            ekspluatatsii lyukos"yemov konstruktsii KB
            koksokhimicheskogo mashinostroyeniya)

PERIODICAL: Koks i khimiya, 1959, Nr 8, pp 18-20 (USSR)

ABSTRACT: For the mechanisation of opening and closing charging
            holes, cleaning of covers and cover frames, as well as
            sweeping spillage produced during charging, the Design
            Office for the Coke Oven Machine Building produced a
            few types of machinery which have been tested on a
            number of coking plants. The final type of the
            installation which was recommended for general
            introduction is described and illustrated (figure).
            The specific features of the installation are that
            all operations are carried out from a single position
Card 1/2   of the larry car and the replacement of covers is done

SOV/68-59-8-7/32

From Experience of Operation of the Machine for the Removal of Covers from Charging Holes Designed by the Bureau for Coke Oven Machine Building

correctly (without deviations from true horizontal position). There is 1 figure and 1 table.

ASSOCIATION: Zhdanovskiy koksokhimicheskiy zavod
(Zhdanov   Coking Works) (K.I. Aleksandrov);
Yasinovskiy koksokhimicheskiy zavod
(Yasinovka Coking Works) (A.I. Shevchenko);
KB koksokhimicheskogo mashinostroyeniya
(KB for Coke Oven Machine Building) (I.L. Nepomnyashchiy).

Card 2/2

SOV/68-59-9-15/22

AUTHOR: Aleksandrov, K.I.

TITLE: An Improvement of the Individual Parts of Bridge Cranes
             for Coal Handling

PERIODICAL: Koks i khimiya, 1959, Nr 9, pp 52 - 55   (USSR)

ABSTRACT: Some modifications in the design of some parts of two
           bridge cranes used for handling coal at the Zhdanov
           Works are described and illustrated.
           There are 6 figures.

ASSOCIATION: Zhdanovskiy koksokhimicheskiy zavod   (Zhdanov
              Coking Works)

Card 1/1

ALEKSANDROV, Kirill Ivanovich; INDENBAUM, V.S., red.; VAGIN, A.A.,
red. izd-va; ISLENT'YEVA, P.G., tekhn. red.

[Exhausters; practical manualfor machine operators and at-
tendants of machine sections of by-product coke plants] Ga-
zoduvki; prakticheskoe rukovodstvo dlia mashinistov i ob-
sluzhivaniushchego personala mashinnykh otdelenii koksokhi-
micheskikh zavodov. Moskva, Gos. nauchno-tekhn.izd-vo lit-ry
po chernoi i tsvetnoi metallurgii, 1962. 224 p.
(MIRA 15:2)

(Coke industry--Equipment and supplies)

1. ALEKSANDROV K.K.

2. USSR (600)

4. Silver Fox

7. Results of dual breeding of silver fox vixens with different males, Kar.i zver. 5 no.6, 1952.

9. <u>Monthly List of Russian Accessions</u>, Library of Congress, April 1953, unclass.

ALEKSANDROV, K.K.

Make wider use of rail welding. Put' i put.khoz. 6 no.5:9 '62.
(MIRA 15:4)

1. Glavnyy inzh. sluzhby puti, Tashkent.
(Railroads—Rails—Welding)

ALEKSANDROV, K.K.; KOROTKOV, V.V., starshiy prepodavatel';
TARSIN, V.P., assistent (Tashkent)

Need for urgent measures. Put' i put. khoz. 8 no.1:40   '64.
(MIRA 17:2)

1. Glavnyy inzh. sluzhby puti Sredneaziatskoy dorogi,
Tashkent (for Aleksandrov). 2. Tashkentskiy institut inzhe-
nerov zheleznodorozhnogo transporta (for Korotkov).

ALEKSANDROV, K.K.; KOLESNIKOV, P.I.

Acceleration of the technological progress is the aim. Put' i put.
khoz. 8 no.3:15 '64.   (MIRA 17:3)

1. Glavnyy inzh.sluzhby puti, Sredneaziatskaya doroga, Tashkent
(for Aleksandrov). 2. Zaveduyushchiy kafedroy "Put' i putevoye kho-
zyaystvo" Tashkentskogo instituta inzhenerov zheleznodorozhnogo
transporta, Tashkent (for Kolesnikov).

ALEKSANDROV, K.K.; YERMICHEV, I.M.

Temperature conditions of rails. Put' i put.khoz. 8 no.6:17-18 '64.
(MIRA 17:9)

1. Glavnyy inzh. sluzhby puti, Tashkent (for Aleksandrov). 2. Nachal'nik
Tashkentskoy geofizicheskoy stantsii (for Yermichev).

L 62504-65   EPF(c)/EWP(j)/EWT(m)/T   WW/RM

UR/0081/65/000/006/S072/S073

ACCESSION NR: AR5011417

SOURCE: Ref. zh. Khimiya, Abs. 6S490

AUTHOR: Sidorov, V. A.; Trosman, G.M.; Aleksandrov, K.N.

TITLE: Self-extinguishing foam polyurethane

CITED SOURCE: Vestn. tekhn. i ekon. inform. N-i. in-t tekhn.-ekon. issled. Gos. kom-ta khim. prom-sti pri Gosplane SSSR, vyp. 7, 1964, 11

TOPIC TAGS: polyurethane, foam plastic, polyvinyl chloride, flammability

TRANSLATION: In order to reduce the inflammability of elastic foam polyurethane, up to 50% of polyvinylchloride was added to the mixture before adding the 2,4- and 2,6-isomers of toluylenediisocyanate. The introduction of polyvinylchloride impairs some of the foam polyurethane characteristics, such as ultimate tensile strength, melting point, elongation during the tensile test, and increased weight losses with heating. However, the foam polyurethane also acquires desirable properties (reduced inflammability, good weldability with hf current, and ease of molding into complex shapes). Z. Ivanova.

SUB CODE: MT, OC   ENCL: OO
Card 1/1

SIDOROV, V.A.; MOROZOVA, N.V.; TROSMAN, G.M.; ZAYTSEVA, N.P.; ALEKSANDROV, K.N.

Using stabilized polyamide films in agriculture. Biul. tekh.-ekon.
inform. Gos. nauch.-issl. nauch. i tekh. inform. 17 no.9:67-69
S '64   (MIRA 18:1)

L 55866-65   EWT(m)/EPF(c)/EWP(j)/T   Pc-4/Pr-4   RM
ACCESSION NR: AR5014993   UR/0081/65/000/008/S067/S067

SOURCE: Ref. zh. Khimiya. Abs. 8S390

AUTHOR: Sidorov, V. A.; Trosman, G. M.; Rogov, V. M.; Aleksandrov, K. N.

TITLE: Improving the performance characteristics of PK-4 polyamide film

CITED SOURCE: Vestn. tekhn. i ekon. inform. N.-i in-t tekhn.-ekon. issled. Gos kom-ta khim. prom-sti pri Gosplane SSSR, vyp. 7, 1964, 13-14

TOPIC TAGS: polyamide film, polymer film strength, polymer aging, stabilizer, protective coating, polyurethan lacquer, film transmittivity, phthalocyanin blue

TRANSLATION: To improve the performance characteristics of the PK-4 polyamide film (PF) in agricultural applications, stabilizing admixtures are added to the composition, such as aniline-phenol-formaldehyde resin (polyamide film of brand PF-4FF) or cresol; the PF is also coated with a protective layer of polyurethan lacquer (PUL) consisting of a mixture of glycerol toluylenediisocyanate, a polyester, chlorobenzene, and ethyl acetate. Accelerated aging of PF was studied under a PRK-4 lamp for 10 hr. It was found that the properties of PF of brand

Card 1/2

L 55866-65
ACCESSION NR: AR5014993

PK-4FF and of brand PK-4 with PUL remain practically unchanged, and that the photometric qualities are even improved in PF of PK-4 brand with PUL. To achieve the maximum light-transmitting capacity in various portions of the solar spectrum, a test batch of PF of blue color was prepared which had a pronounced maximum in the 440-540 mμ region. Phthalocyanin blue pigment was introduced in the amount of 0.01% prior to the polycondensation. The PF obtained is now undergoing field tests. L. Kotlyarevskaya

SUB CODE: MT   ENCL: 00

Card   2/2

SIDOROV, V.A.; TROSMAN, G.M.; ALEKSANDROV, K.N.

Lengthening the service life of the "PK-4" polyamide film.
Plast. massy no.8:61-62 '65.   (MIRA 18:9)

L 58974-65   EWT(m)/EPF(c)/EWP(j)   Pc-4/Pr-4   RM

ACCESSION NR: AP5014699

UR/0191/65/000/006/0065/0066

678.675-41(:478.048:678.632'32'21

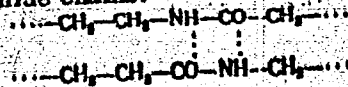AUTHOR: Sidorov, V.A.; Trosman, G.M.; Rogov, V.M.; Aleksandrov, K.N.

TITLE: Stabilization of polyamide films by an aniline-phenol-formaldehyde resin

SOURCE: Plasticheskiye massy, no. 6, 1965, 65-66

TOPIC TAGS: polyamide film, polymer lightfastness, resol, polymer stability, phenolformaldehyde resin, polymer aging, polymer crosslinkage
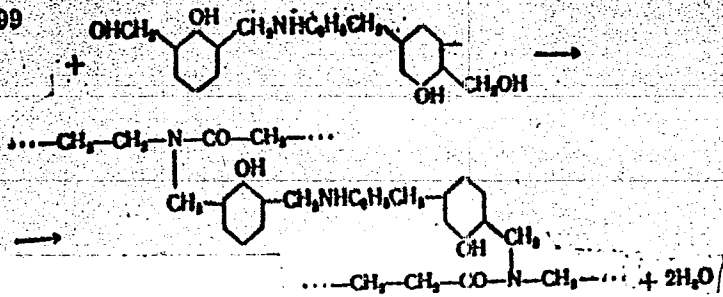
ABSTRACT: The lightfastness of polyamide films is greatly improved by adding 1-2% of an aniline-phenol-formaldehyde resin (APF) to the polyamide resin. Experimental batches of stabilized polyamide film PK-4FF were prepared, after which the films were subjected to accelerated aging in a weatherometer. The introduction of the APF resin was found to increase the aging resistance of the polyamide film considerably, and to leave the desirable light transmission properties completely unaffected. It is postulated that the methyl groups of the APF resin react with the amide groups of polyamides, forming water and cross-linking the polyamide chains:

$$\cdots -CH_2-CH_2-NH-CO-CH_2-\cdots$$

$$\cdots -CH_2-CH_2-CO-NH-CH_2-\cdots$$

Card 1/2

L 58974-65

ACCESSION NR: AP5014699

$$OHCH_2 \quad OH \quad CH_2NHC_2H_4CH_2 \quad + \quad \ldots -CH_2-CH_2-N-CO-CH_2-\ldots \mid OH$$

$$CH_2-\langle\rangle-CH_2NHC_2H_4CH_2-\langle\rangle-CH_2 \quad \ldots -CH_2-CH_2-CO-N-CH_2-\ldots + 2H_2O$$

Thus, the stabilizing influence of this resin is due to the presence of phenol and imine groups and to its curing effect during the formation of the polyamide film. Hence, other types of curing resols may also be effective in stabilizing various types of polymers. Orig. art. has: 2 figures, 1 formula and 3 tables.

ASSOCIATION: none

SUBMITTED: 00   ENCL: 00   SUB CODE: MT

NO REF SOV: 007   OTHER: 002

Card 2/2

L 14610-66   EWT(m)/T/EWP(j)   RM

ACC NR: AP6001500   (A)   SOURCE CODE: UR/0191/65/000/012/0038/0040

AUTHORS: Slani, I. I.; Kutyanin, G. I.; Aleksandrov, K. N.

ORG: none

TITLE: Study of the properties of varnished and plated polymeric films

SOURCE: Plasticheskiye massy, no. 12, 1965, 38-40

TOPIC TAGS: protective coating, polymer, varnish, tensile strength, elastic
modulus / PK-4 polyamide film, PETF-20 polyethylene terephthalic film

ABSTRACT: This study involved the improvement of physical and mechanical properties,
and the weatherproofing of: 1) polyamide films of uniaxial elongation PK-4;
2) polyvinyl films with a complex plasticizer; 3) polyethyleneterephthalic films
PETF-20. Protective varnish or metallic coating was employed. Two-component poly-
urethane lake, consisting of polyisocyanate and polyhydroxy compounds, was used as
varnish coating; aluminum applied by vacuum spraying was tested as metallic protec-
tive coating. Rigidity, tensile strength, elongation at breaking point, and elas-
ticity modulus of treated and untreated films (before and after aging) are compared.
It is concluded that rigidity and tensile strength of treated films before and after
aging are considerably improved. Elastic properties of the treated films are not
affected. Orig. art. has: 3 figures and 1 table.

SUB CODE: 07/ SUBM DATE: none/ ORIG REF: 003/ OTH REF: 004
                                            UDC: 678.01:027.5

Card 1/1

ALEKSANDROV, Kr.

Is ozone dangerous? Prir i znanie 17 no.8:25 0 '64.

DUKOV, K.; ALEKSANDROV, Kr.; TODOROV, T.

News, current events, and facts. Prir i znanie 17 no.9:23-24
N '64.

L 48587-65   EWT(m)/EWP(j) Pc-4   RM

ACCESSION NR: AR5005877   S/0081/64/000/023/S058/S058

SOURCE: Ref. zh. Khimiya, Abs. 23S347

AUTHOR: Sidorov, V. A.; Rogov, V. M.; Aleksandrov, K. N.; Trosman, G. M.;
Aref'yev, V. N.

TITLE: A study of the dependence of the principal physicomechanical properties
of elastic polyurethan foams on technological factors. Part 1.

CITED SOURCE: Nauchno-issled. tr. Vses. n.-i. in-t plenochn. materialov i
iskusstv. kozhi, sb. 15, 1964, 44-52

TOPIC TAGS: polyurethan, foam plastic, elastic foam, polyurethan density,
polyurethan mechanical property, polyurethan foam manufacture, foam plastic
mixing, toluylene diisocyanate, foam coefficient, pore size

TRANSLATION: A study of the dependence of the principal physicomechanical pro-
perties of polyurethan foams on the technological factors which have an effect on
their quality was carried out on the UBT-65 industrial mixing and casting machine
and on the SSK-1 laboratory installation (standard mixing chamber), developed by
VNIIPIK, which is an industrial machine in miniature. The rate of rotation of
the cross-shaped blade mixer was 3,000, 4,000 and 5,000 rpm, the angle between

Card 1/2

L 48587-65

ACCESSION NR: AR5005877

the blades and the axis of the shaft was 95°, and power of the compressor was 5 atmospheres. The results showed that the strength of polyurethan foam depends primarily on its density, which is directly related to its water content and the stoichiometrically corresponding content of toluylene diisocyanate. The foam co-efficient affects both the physicomechanical properties (the elasticity of poly-urethan foam is reached at a foam coefficient of 80-110%) and the exothermic nature of the chemical reactions (maximal at a foam coefficient of 100%). As the foam coefficient decreases, the rupture strength also decreases, while the rela-tive and residual elongation are increased. The pore size is affected by surface-active agents (it is recommended that paraffin oil, silicone derivatives, etc. be added to increase the pore size) and by a change in pressure in the mixing chamber produced by matching of the diameter of the reducing disk to the overflow pipe. It was found that polyurethan foam acquires stable physicomechanical properties only after 48 hours, not 24 hours. The quality of polyurethan foam is affected by the rate of rotation of the mixer, the temperature of the raw material ($\leq$ 18C) and its properties, the presence of air inclusions in the polyether, etc.

L. Kotlyarevskaya

SUB CODE: MT   ENCL: 00

Card 2/2

SLANI, I.I.; KUTYANIN, G.I.; ALEKSANDROV, K.N.

Studying the properties of lacquered and metallized polymeric
films. Plast. massy no. 12:38-40 '65   (MIRA 19:1)

*ALEKSANDROV, K.S., ENGINEER   CAND TECH SCI

Dissertation: "Length of Piles a s a Basic Strength Index of a Pile Foundation Under
                Conditions of Weak Grounds."

18 April 49
      Moscow Order of the Labor Red Banner Engineering Construction Inst imeni
      V.V. Kuybyshev.

SO Vecheryaya Moskva
        Sum 71

ALEKSANDROV, K.S., kand.tekhn.nauk

Calculating the life of construction elements in planning
buildings and structures. Biul. stroi. tekhn. 15 no.9:12-13
S '58.   (MIRA 11:10)

1. Otdel NIR Akademii stroitel'stva i arkhitektury SSSR.
               (Building--Estimates)

RYABINKIN, L.N.; ALEKSANDROV, K.S.

Method of visualizing sounds produced by mosquitoes. Dokl. AN SSSR
139 no.3:485-487 Jl '61.   (MIRA 14:7)

1. Institut fiziki Sibirskogo otdeleniya AN SSSR. Predstavleno
akademikom Ye.N. Pavlovskim.
                    (Insect sounds) (Mosquitoes)

L 57020-65   EWT(1)/EPA(s)-2/EWT(m)/EPF(c)/EEC(t)/EWP(t)/EWP(b)   Pt-7/P1-4/
P1-4   IJP(c)   JD/WW/GG

ACCESSION NR: AP5016116   UR/0048/65/029/006/0907/0909

AUTHOR: Aleksandrov, K.S.; Gabuda, S.P.; Lundin, A.G.

TITLE: Proton magnetic resonance in ferroelectric dicalcium strontium propionate /Report, 4th All-Union Conference on Ferroelectricity held in Rostov-on-the-Don 12-18 Sept 1964/

SOURCE: AN SSSR. Izvestiya. Ser.fizicheskaya, v.29,no.6,1965,907-909

TOPIC TAGS: ferroelectric material, polycrystal, magnetic resonance, proton resonance, phase transition, calcium compound, strontium compound, organic compound

ABSTRACT: The proton magnetic resonance spectra of polycrystalline samples of $Ca_2Sr(CH_3CH_2COO)_6$ were investigated from room temperature to -196°C in a magnetic field of 3000 Oe. The measurements were undertaken to obtain information concerning the disposition of the CH_3CH_2 groups in the crystal lattice. The polycrystalline samples were obtained by evaporating solutions of calcium and strontium propionates,

Card 1/3

L 57020-65

ACCESSION NR: AP5016116

and the magnetic resonance apparatus has been described elsewhere (A. G.Lundin and G.M.Mikhaylov, Pribory i tekhn.eksp.,No.2,92,1960). Above the $8.5^{\circ}C$ ferroelectric Curie point the second moment of the absorption line was 5 Oe^2. At the Curie point the second moment increased to 8 Oe^2 and remained at this value to liquid nitrogen temperatures where it began to increase gradually with decreasing temperature. These absorption widths are compared with widths calculated with different assumptions concerning the behavior of the CH_3 and CH_2 groups in the lattice. It is concluded that the ferroelectric transition cannot be due to reorientation of the CH_3 and CH_2 groups about the C-C bonds but is probably related to the fact that the propionate ion is not planar. According to this hypothesis transitions between two equally probable nonplanar configurations would be possible above the Curie point but not below it. "The authors thank A.I.Rostuntseva for the synthesis of the compound and N.F.Kostin for the x-ray identification." Orig.art.has: 8 figures.

Card 2/3

L 57020-65
ACCESSION NR: AP5016116

ASSOCIATION: Institut fiziki Sibirskogo otdeleniya Akademii nauk SSSR
(Physics Institute, Siberian Section of the Academy of Sciences, SSSR)

SUBMITTED: 00   ENCL: 00   SUB CODE: SS, NP

NR REF SOV: 002   OTHER: 009

Card 3/3

L 57569-65   EWT(1)/T/EEC(b)-2 P1-4   IJP(c)   GG

ACCESSION NR: AP5016132   UR/0048/65/029/006/0973/0977

AUTHOR: Anistratov, A.T.; Fotchenkov, A.A.; Aleksandrov, K.S.

TITLE: Measurement of the linear electro-optical effect in crystals by a dynamic procedure /Report, 4th All-Union Conference on Ferroelectricity held in Rostov-on-the-Don 12-18 Sept 1964/

SOURCE: AN SSSR. Izvestiya.Ser.fizicheskaya,v.29,no.6,1965, 973-977

TOPIC TAGS: ferroelectric crystal, Rochelle salt, double refraction, phase transition

ABSTRACT: The authors describe a method for measuring the electro-optical constants of a crystal with the aid of an apparatus which they have described elsewhere (Pribory i tekhnika eksperimenta No.3, 193,1965). An alternating electric field is applied to the crystal and the consequent modulation of a light beam traversing the crystal between crossed Nicols is observed. The theory of this method is developed and it is shown that when the Nicols are crossed (90°) the

Card 1/3

L 57569-65
ACCESSION NR: AP5016132

deformation of the optical indicatrix modulates the beam at the applied frequency and the rotation of the indicatrix modulates the beam at twice this frequency. When the Nicols are set at 45^0 the situation is reversed: rotation of the optical indicatrix modulates the light beam at the applied frequency and deformation modulates it at the second harmonic. With the proposed method, therefore, it is possible accurately and separately to determine the effects of rotation and deformation of the optical indicatrix. The proposed method was employed to investigate the electro-optical effect in Rochelle salt. For this material, of the 18 electro-optical coefficients r_{ij}, only r_{41}, r_{52} and r_{63} do not vanish in the paraelectric state. In the less symmetric ferroelectric state r_{11}, r_{21}, r_{31}, r_{53} and r_{62} also are different from zero. The quantities r_{41} and $c = n_y^3 r_{21} - n_z^3 r_{31}$ were measured at temperatures from 21 to 36^0C (n_y and n_z are the corresponding refractive indices). The frequency of the alternating field was 1000 cycle/sec and its amplitude did not exceed 1 kV/cm. The coefficient r_{41} reached its maximum value of 4×10^{-6} cgs units at the Curie point. Application of a constant electric field reduced the value

Card 2/3

L 57569-65

ACCESSION NR: AP5016132

of r_{41}. In the presence of a 2 kV/cm bias field the quantity c was independent of temperature and equal to 1.9×10^{-7} cgs units in the ferroelectric phase. The quantity c did not fall immediately to zero at the Curie point, but was still approximately 5×10^{-9} cgs units at $28^{\circ}C$. This behavior is ascribed to "smearing out" of the phase transition by the bias field. The numerical results must be regarded as preliminary, for they have not been corrected for the temperature dependence of the natural double refraction. Orig.art.has: 9 formulas, 2 figures and 2 tables.

ASSOCIATION: Institut fiziki Sibirskogo otdeleniya Akademii nauk SSSR (Physics Institute, Siberian Section of the Academy of Sciences of the SSSR)

SUBMITTED: 00   ENCL: 00   SUB CODE: SS,OP

NR REF SOV: 008   OTHER: 003

Card 3/3

ALEKSANDROV, K.S.

6956. A PARTICULAR CASE OF THE PROPAGATION OF ELASTIC WAVES IN CRYSTALS, K.S.Aleksandrov. Kristallografiya, Vol. 1, No. 1, 115-9 (1956). In Russian.

The cases considered relate to the propagation of transverse waves (1.67 Mc/s) in ammonium dihydrogen phosphate along a two-fold axis. Phenomena analogous to optical polarization and double refraction are discussed and illustrated by experimental oscillo-grams. See also Abstr. 697, 691 (1953); 3525 (1955).

R. F. S. Hearmon

Inst. Crystallography, AS USSR

ALEKSANDROV, K.S

USSR / Mechanical Properties of Crystals and Polycrystalic   E-9
    Compounds.

Abs Jour   : Ref Zhur - Fizika, No 4, 1957, No 9409

Author   : Aleksandrov, K.S., Khaimov-Mal'kov, V.Ya.
Inst   : Institute of Crystallography, Academy of Sciences USSR
Title   : Rotation of Plane of Polarization of Elastic Shear Waves

Orig Pub   : Kristallografiya, 1956, 1, No 3, 373-374

Abstract   : In a crystal specimen of rock salt, approximately 100 mm long,
cut in the $[110]$ direction and twisted about this direction
by 90°, there was sent a short ultrasonic pulse of shear wa-
ves at a frequency of 1.67 Mc. The receiver of a Y-section
from the other end of the specimen received the ultrasonic
vibrations passing through the crystal, which after amplifi-
cation were applied to the plates of an oscillograph. It
was shown that the twisted crystal of rock salt rotates the
plane of oscillations of the particles in the shear wave
(plane of polarization) by an angle that equals approxima-

Card   : 1/2

USSR / Mechanical Properties of Crystals and Polycrystalic   E-9
            Compounds.

Abs Jour   : Ref Zhur - Fizika, No 4, 1957, No 9409

Abstract   : tely the angle of twist of the specimen. This phenomenon
             was observed only for those directions of propagation (twist
             axis), where there is a difference in the velocities of the
             two shear waves and where the directions of their displace-
             ment are fixed. Similar investigations with rock-salt crys-
             tals, beaten out along the cleavages, did not produce the
             above effect.

Card   : 2/2

ALEKSANDROV, K.S.

The propagation of elastic waves in special directions in crystals. K. S. Aleksandrov. Inst. Cryst., Acad. Sci. U.S.S.R., Moscow. *Kristallografiya* 1, 18-29 (1956).— By Borgnis' method exact equations are deduced that determine the possible directions of elastic waves in all possible crystals. Also simplifications the corresponding equations for tetragonal, hexagonal, and cubic crystals are derived. In cubic crystals there exist special directions not mentioned by Borgnis. Such special directions are shown from possible symmetry of the tensor of the elastic constants. The propagation of ultrasonic waves in a special direction in various crystals was studied experimentally and these showed an analogy with light propagating in a quarter-wave plate. For the production of circularly polarized elastic waves were prepd. The analogy is true only for the special directions and only for transverse waves.   A. L. Mackay

ACC NR: AP7005858   SOURCE CODE: UR/0181/66/008/012/3637/3639

AUTHOR: Aleksandrov, K. S.; Reshchikova, L. M.; Besnosikov, B. V.

ORG: Institute of Physics, SO AN SSSR, Krasnoyarsk (Institut fiziki SO AN SSSR)

TITLE: Anomalies of elastic properties in KMnF$_3$

SOURCE: Fizika tverdogo tela, v. 8, no. 12, 1966, 3637-3639

TOPIC TAGS: elastic wave, temperature dependence, potassium compound, manganese compound, fluoride, crystal lattice vibration, second order phase transition

ABSTRACT: In view of observation of anomalies in elastic properties of strontium titanate, the authors checken on the possible existence of such anomalies in other perovskite substances, particularly KMnF$_3$. The crystals were grown in graphite crucibles in an argon atmosphere. The temperature dependence of the elastic wave velocities were determined by pulsed ultrasonic methods at 30 MHz. The temperature dependence of the wave velocity decreased with decreasing temperature, first slowly and then abruptly at 200K, with very strong absorption at 180-190K where measurements could not be made. An increase was then observed below 180K. Twinning was observed by optical means at 180K. A similar wave-velocity dependence and absorption anomaly near 180 - 190K was observed in measurements with shear waves in the [100] direction. The anomaly in the elastic properties of KMnF$_3$ near the phase transition point (184K) is similar to that observed in SrTiO$_3$ at 110K, but the region of anomalous behavior is broader in KMnF$_3$, beginning at 20 - 25° before the transition point, probably as

Card 1/2

ACC NR: AP7005858

a result of the larger lattice distortion. Since the phase transition of $KMnF_3$ is not accomapnied by anomalies of the magnetic or dielectric properties, it is proposed that the anomalies are due primarily to changes in the lattice vibration spectrum. The spontaneous lattice deformation arising in the low-temperature phase can be interpreted from the point of view of Landau's theory of second-order phase transitions. The anomalies in the velocity and absorption of the elastic wave near the transition can also have a relaxation character. Orig. art. has: 1 figure.

SUB CODE: 20/   SUBM DATE: 03May66/   ORIG REF: 001/   OTH REF: 006

Card 2/2

Aleksandrov, K.S.

J

POLAND/Acoustics.

Abs Jour: Referat Zhur-Fizika, 1957, No 4, 10213

Author : Aleksandrov, K.S., Nosikov, O.V.
Inst   : Institute of Crystallography, Academy of Sciences USSR, Moscow;
          Leningrad Electrotechnical Institute, USSR.
Title   : Instrument for Measuring Elastic Moduli of Crystals.

Orig Pub: Akust. zn., 1956, 2, No 3, 244-247

Abstract: Description of an ultrasonic instrument for the measurement of
the elastic moduls of a crystal, based on the measurement of ve-
locity of propagation of short pulses of longitudinal and trans-
verse elastic vibrations in small specimens. The unknown velocity
is determined by superimposing on the screen of a cathode ray os-
cillograph two pulses, one passing through the specimen and one
passing through a liquid whose velocity of sound is known with
sufficient accuracy. The measuring liquid employed is an aqueous
solution of ethyl alcohol, which has a low temperature coefficient
of velocity.

Card   : 1/2

J

Data on the measurement of elastic moduli of a single crystal of
dihydrophosphate of amonium are given and are found to agree with
data measured by other investigators.

SOV/124-58-7-7940 D

AUTHOR: Aleksandrov, K.S.

TITLE: The Propagation of Elastic Waves in Particular Directions
            Inside Crystals (Raspostraneniye uprugikh voln po osobennym
            napravleniyam v kristallakh)

ABSTRACT: Bibliographic entry on the author's dissertation for the de-
            gree of Candidate of the Physical and Mathematical Sciences,
            presented to the In-t kristallogr. AN SSSR   (Institute of Crystal-
            lography, Academy of Sciences, USSR), Moscow, 1957

ASSOCIATION: In-t kristallogr. AN SSSR. (Institute of Crystallography,
            Academy of Sciences, USSR), Moscow

            1. Crystals--Vibration

Card 1/1

ALEKSANDROV, K.S.

Propagation of elastic shear waves in crystals subjected to torsion around a specific direction. Kristallografiia 2 no.1:140-144 '57.

(MLRA 10:7)

1. Institut kristallografii Akademii nauk SSSR.
    (Crystallography) (Elastic waves) (Torsion)

AUTHORS: Chumakov, A.A., Sil'vestrova, I.M. and Aleksandrov, K.S.

TITLE: 70-5-29/31
The Dielectric, Elastic and Piezo-electric Properties of Single Crystals of Benzophenone (Dielektricheskiye uprugiye i p'yezoelektricheskiye svoystva monokristallov benzofenona)

PERIODICAL: Kristallografiya, 1957, Vol.2, No.5, pp. 707-709 (USSR).

ABSTRACT: Of the four modifications of crystalline benzophenone $(C_6H_5)_2CO$ the one studied was the stable orthorhombic one belonging to the symmetry group 2:2. The specimens were made from large crystals (200-300 cm^3) prepared from acetone or carbon tetrachloride solution. The material had a density of 1.219 g/cm^3 at 20 °C and a m.p. of 47.0°. Dielectric constant measurements were made at 10^3 and 10^6 c/s and at a field strength of 5-10 V/cm.

ε_{11} = 4.0 ± 0.05, ε_{22} = 4.1 ± 0.05, ε_{33} = 3.7 ± 0.05

tan δ = (6 ± 0.5) x 10^{-4} .

The dielectric strengths (in kV/mm) were found to be :

E_x = 28 ÷ 30 ± 3 , E_y = 22 ÷ 25 ± 3 , E_z = 40 ÷ 50 ± 4

Card1/4   The elastic moduli were found to be (in 10^{10} dynes/cm^2)

The Dielectric, Elastic and Piezo-electric Properties of Single Crystals of Benzophenone.   70-5-29/31

$c_{11} = 10.70 \pm 0.15$

$c_{33} = 7.10 \pm 0.04$ $c_{22} = 10.00 \pm 0.15$

$c_{55} = 1.55 \pm 0.01$ $c_{44} = 2.03 \pm 0.01$

$c_{23} = 3.21 \pm 0.13$ $c_{66} = 3.53 \pm 0.03$

$c_{12} = 5.50 \pm 0.20$ $c_{31} = 1.69 \pm 0.08$

Resonance and anti-resonance frequencies were measured for three slices and the piezo-moduli were calculated from:

$$d_{ik} = \frac{\pi}{2} \ \frac{1}{f_R \ell} \left(\frac{\varepsilon_{ik} \Delta f}{4\pi \varrho \, f_R} \right)^{1/2}$$

where f_R = resonance frequency, $\Delta f = f_a - f_R$ (f_a = anti-resonance frequency), ε_{ik} = dielectric susc., ℓ = length, ϱ = density,

Card2/4

The Dielectric, Elastic and Piezo-electric Properties of Single
Crystals of Benzophenone.   70-5-29/31

$$d_{14} = 3.7 \pm 0.1 \times 10^{-7} \text{ c.g.s. units}$$
$$d_{25} = 0.6 \pm 0.02$$
$$d_{36} = 6.1 \pm 0.1 .$$

The coefficients of electromechanical coupling K were calcu-
lated from:

$$k = \frac{\pi}{2}\left(\Delta f/f_R\right)^{1/2}$$

as $k_{XY\ t_{45^\circ}} = 7.5\%$

$k_{YX\ t_{45^\circ}} = 3.8\%$

$k_{ZX\ t_{45^\circ}} = 16.0\%$.

XYt_{45° = X perpendicular to slice, length at 45° to Y and Z
and electrodes on face perp. to X.

Card 3/4

The Dielectric, Elastic and Piezo-electric Properties of Single
Crystals of Benzophenone.   70-5-29/31

The high value of $k_{ZX\ t_{45^\circ}}$ contradicts Mason's view
("Piezoelectric Crystals and Their Applications in Ultrasonics",
Rus. ed. 1952).
Benzophenone is recommended as useful material for piezo-
electric applications at moderate temperatures.
Acknowledgments to Academician A.V. Shubnikov.
There are 2 figures and 3 Slavic references.

ASSOCIATION: Institute of Crystallography Ac.Sc. USSR.
                (Institut Kristallografii AN SSSR)
SUBMITTED: February 9, 1957.
AVAILABLE: Library of Congress.
Card 4/4

AUTHORS: Sil'vestrova, I.M., Aleksandrov, K.S. and Chumakov, A.A.   70-3-3-32/36

TITLE: The Growth of Crystals of Terpene Monohydrate and Their Elastic and Piezoelectric Properties (Vyrashchivaniye kristallov terpin-monogidrata i ikh uprugiye i p'yezo-elektricheskiye svoystva)

PERIODICAL: Kristallografiya, 1958, Vol 3, Nr 3, pp 386 - 387 (USSR).

ABSTRACT: Crystals of cis-terpene monohydrate $[C_{10}H_{18}(OH)_2 \cdot H_2O]$ have mp. 116 °C and $d_{obs.} = 1.11$ g/cm^3. A water thermostat of Heppler's type was used to grow crystals of 30 - 50 g from a solution in alcohol and acetone cooled 1 - 2 ° below the saturation point. Crystals (morphologically) belong to the class 2.m (rhombopyramidal). The principal dielectric constants at 1 Mc/s and a field of 5-10 V/cm were found to be $e_{11} = 2.6 \pm 0.05$, $e_{22} = 2.8 \pm 0.05$, $e_{33} = 3.2 \pm 0.05$. The elastic moduli c_{ik} were measured by an impulsive ultrasonic method as ($\times 10^{10}$ dynes/cm^2)

Card 1/2

The Growth of Crystals of Terpene Monohydrate and Their Elastic and
Piezoelectric Properties   70-3-3-32/36

$c_{11} = 12.5 \pm 0.2,$

$c_{22} = 9.9 \pm 0.2,$ $c_{44} = 2.43 \pm 0.05$

$c_{33} = 15.3 \pm 0.2,$ $c_{55} = 2.23 \pm 0.04$ $c_{23} = 4.10 \pm 0.2$

$c_{66} = 3.46 \pm 0.06$ $c_{31} = 6.20 \pm 0.3$

$c_{12} = 3.80 \pm 0.4$

For the piezoelectric properties the resonant and anti-
resonant oscillation frequencies of 6 blocks or plates were
measured giving (in cgsu X 10^{-8}) $d_{31} = -6.5 \pm 0.1$

$d_{32} = 10.6 \pm 0.1,$ $d_{33} = 6.6 \pm 0.3,$ $d_{15} = 13.0 \pm 0.2,$

$d_{24} = 17.3 \pm 0.2$.

There are 1 figure and 2 references, 1 Soviet and 1 German.

ASSOCIATION: Institut kristallografii AN SSSR
                (Institute of Crystallography, Ac.Sc.USSR)

SUBMITTED: December 3, 1957
Card 2/2

AUTHORS: Chumakov, A.A., Sil'vestrova, I.M. and Aleksandrov, K.S.

SOV/70-3-4-12/26

TITLE: Growing Crystals of l-ramnose Monohydrate and the Investigation of their Dielectric, Piezoelectric, and Elastic Properties (Vyrashchivaniye kristallov l-ramnozy monogidrata i issledovaniye ikh dielektricheskikh, p'yezoelektricheskikh i uprugikh svoystv)

PERIODICAL: Kristallografiya, 1958, Vol 3, Nr 4, pp 480-482 (USSR)

ABSTRACT: Crystals of l-ramnose monohydrate, which belong to the dihedral axial class of the monoclinic system, weighing up to 285 g were successfully grown from aqueous solution in the interval 30-60° with 1-3 °C super-cooling and with rapid rotation (200-500 rpm) of the crystal. The m.p. is 126 °C and the density 1.471 g/cm^3. The dielectric constants at 1 Mc/s and 10 V/cm were found by Q-meter to be $e_{11} = 2.6$, $e_{22} = 2.9$, $e_{33} = 3.0$, $e_{13} = 0.15$. The piezoelectric moduli (Class 2) were found to be (in c.g.s.u. X 10-8):

$d_{21} = +6.0$, $d_{23} = -13.7$, $d_{25} = -16.1$, $d_{22} = -8.7$,

$d_{14} = -11.8$, $d_{16} = +4.8$, $d_{34} = -19.8$, $d_{36} = +3.8$.

Card 1/3

Growing Crystals of *l*-ramnose Monohydrate and the Investigation of their Dielectric, Piezoelectric and Elastic Properties   SOV/70-3-4-12/26

The greatest electromechanical coupling coefficient, 11.7%, occurs for compressional-extensional oscillations along the Z-axis (piezoelectric modulus d_{23}). This material can work as a transmitter of hydrostatic pressure with a piezomodulus of $d_h = -16.4 \times 10^{-8}$ c.g.s.u. The moduli of elasticity were determined by an ultrasonic impulse method and the velocities of u/s waves in six directions − [100], [010], [001], [110], [101], [011] − were measured. The moduli $c_{ik} \cdot 10^{10}$ dynes/cm^2 at 20 − 22 °C are (tabulated against ik): (11) 3.82; (22) 2.19; (33) 1.98; (44) 0.537; (55) 0.502; (66) 0.911; (23) 0.888; (31) 1.66; (12) 1.60; (15) −0.03; (25) 0.122; (35) −0.118; (46) 0.022. Resonance and impulse methods agree fairly well.

Card 2/3

Growing Crystals of l-ramnose Monohydrate and the Investigation   SOV/70-3-4-12/26
of their Dielectric, Piezoelectric and Elastic Properties

There are 2 figures, 1 table and 7 references, 6 of
which are Soviet and 1 German.

ASSOCIATION: Institut kristallografii AN SSSR
(Institute of Crystallography, AS USSR)

SUBMITTED: February 14, 1958

Card 3/3

AUTHOR: Aleksandrov, K.S.   SOV/70-3-5-16/24

TITLE: On the Surfaces of Elastic Waves in Crystals
(O poverkhnostyakh uprugikh voln v kristallakh)

PERIODICAL: Kristallografiya, 1958, Vol 3, Nr 5, pp 620-623 (USSR)

ABSTRACT: Musgrave (PRS A226, 1954, pp 339-66) has shown by
constructing wave surfaces that 5 and not 3 different
velocities of wave propagation are possible in certain
directions in cubic and hexagonal crystals. This result
is confirmed theoretically and experimentally for KBr.
The section of the wave surface perpendicular to [001]
has been constructed by a graphical method and shows that
the 5 velocities are possible for directions of propagation
about 30° either side of [110]. One wave is quasi-
longitudinal, one is purely shear and the other three are
quasi-shear waves. Except for the first, the direction
of propagation is not coincident with the wave normal
direction. For a wave propagated along a line making
about 40° with [100] the directions of the wave normals
of the three quasi-shear waves make angles of +37°, +13°
and -26° with the direction of propagation. A block of
KBr 100 x 100 x 20 mm was cut so as to illustrate this

Card1/3

On the Surfaces of Elastic Waves in Crystals   SOV/70-3-5-16/24

situation experimentally. Faces were cut perpendicular to the four directions in question (and parallel to [001]) . Waves were excited by a separate cemented quartz plate, resonant at 1.7 Mc/s but operated with 2-5 μsec pulses, stuck to each of the three smaller faces representing wave normal directions in turn. A similar receiver was scanned along the remaining face and the amplitudes of the arriving pulses were measured. A plot of these showed the expected angular differences between wave normals and propagation directions. The accuracy was about ± 2°. Musgrave's demonstration is considered as confirmed. There are 4 figures and 5 references, 2 of which are Soviet, 3 English.

Card 2/3

On the Surfaces of Elastic Waves in Crystals SOV/70-3-5-16/24

ASSOCIATION: Institut kristallografii AN SSSR
                (Institute of Crystallography of the Ac.Sc.USSR)
SUBMITTED: December 3, 1957

Card 3/3

AUTHOR: Aleksandrov, K.S.

TITLE: The Determination of the Moduli of Elasticity of a   SOV/70-3-5-17/24
Monoclinic Crystal by an Impulse Ultrasonic Method
(Opredeleniye moduley uprugosti monoklinnogo kristalla
impul'snym ul'trazvukovym metodom)

PERIODICAL: Kristallografiya, 1958, Vol 3, Nr 5, pp 623-626 (USSR)

ABSTRACT: Normally impulse ultrasonic methods of measuring elastic
moduli of crystals have not been applied to crystals of
symmetry lower than orthorhombic.   Only resonance methods
have been used for monoclinic materials.. Where there are
13 independent moduli in monoclinic crystals, the measure-
ment of all three waves in six crystallographic directions
$[100]$, $[010]$, $[001]$, $[l_1 l_2 0]$, $[l_1 0 l_3]$, $[0 l_2 l_3]$
will give the magnitudes and signs of all moduli.   From a
cube cut from a crystal with faces perpendicular to the
crystallographic axis, the values of the four moduli
c_{22}, c_{44}, c_{66}, c_{46} can be found (but not the sign of
c_{46}).   There are also four relationships between five
other moduli, c_{11}, c_{33}, c_{55}, c_{15}, c_{35}.   For determining

Card 1/3

The Determination of the Moduli of Elasticity of a Monoclinic
Crystal by an Impulse Ultrasonic Method   SOV/70-3-5-17/24

further moduli, a direction of propagation in the
XZ-plane is used. For the moduli c_{12} and c_{25} a 45° Z
cut is used with the direction of propagation along [110].
For the present experiment, crystals of potassium
tartrate were used cut from perfect crystals to an accuracy
of better than 0.5°. The thicknesses in the propagation
directions were 10.00 ± 0.01 mm with cross-sections about
15 x 20 mm. A u/s generator described previously
(Akust. Zh. 1956, Vol 2, pp 244-7) was used. The moduli
c_{ii} were determined to about 2-3% and the remainder to
10-15%. The values found were: ik of c_{ik} first, then
the value of c_{ik} in dyne/cm^2 x 10^{11} :- (11), 3.11;
(22), 3.90; (33), 5.54; (44), 0.87; (55), 1.040;
(66), 0.826; (12), 1.72; (13), 1.69; (23), 1.33;
(15, 0.287; (25), 0.182; (35), 0.71; (46), 0.072. The
corresponding compliances are also tabulated. Data by
Bechman and Mason (from Mason's book) are also adduced for
comparison. There are considerable divergences between

Card2/3

The Determination of the Moduli of Elasticity of a Monoclinic   SOV/70-3-5-17/24
Crystal by an Impulse Ultrasonic Method

these authors' results and the agreement with Bechman's
is much better than with Mason's. Acknowledgments are
made to A.V. Shubnikov and Ye.G. Bronnikova.
There are 1 table and 5 references, 3 of which are
Soviet and 2 English.

ASSOCIATION: Institut kristallografii AN SSSR
                (Institute of Crystallography of the Ac.Sc.USSR)

SUBMITTED: February 14, 1958

Card 3/3

ALEKSANDROV, K. S.

AUTHOR: None Given

TITLE: 30-58-4-29/44
                Dissertations (Dissertatsii).
                Branch of Physico-Mathematical Sciences
                (Otdeleniye fiziko-matematicheskikh nauk).
                July-December 1957 (Iyul'-Dekabr' 1957g.)

PERIODICAL: Vestnik Akademii Nauk SSSR, 1958,   Nr 4,
                pp. 115-116 (USSR)

ABSTRACT: 1)   At the Institute for Crystallography (Institut
                Kristallografii) the following dissertations for the
                degree of a Candidate of Physical Sciences were defended:
                K. S. Aleksandrov - Propagation of Elastic Waves in Par=
                ticular Directions in Crystals.(Rasprostraneniye uprugikh
                voln po osobennym napravleniyam v kristallakh).
                G. P. Shakhovskaya - Working Out of an Apparatus for
                Oltrahigh Pressure and for the Determination of Thermal
                Parameters of Phase Transitions of Some Metals in it.
                (Razrabotka apparatury sverkhvysokogo davleniya i oprede=
Card 1/4   leniye v ney termicheskikh parametrov fazovykh perekhodov
                nekotorykh metallov).

Dissertations. Branch of Physico-Mathematical Sciences.   3o-58-4-29/44
July-December 1957.

2) At the Institute for Geophysics imeni O. Yu. Shmidt
(Institut fiziki Zemli imeni O. Yu. Shmidta) the following
dissertations for the degree of a Doctor of Physico-Mathe-
matical Sciences were defended:
I. K. Ovchinnikov - Screening Influence of the Topmost
Layer of the Earth's Crust in the Electric Prospecting
of Ore Deposits (Ekraniruyushcheye vliyaniye poverkhnost-
nogo sloya zemnoy kory pri elektrorazvedke rudnykh mesto-
rozhdeniy).
3) At the Mathematical Institute imeni V. A. Steklov
(Matematicheskiy Institut imeni V. A. Steklova) the
following dissertations were defended:
a) for the degree of a Doctor of Physico-Mathematical
Sciences:
I. P. Kubilyus - Some Investigations of the Theory of
Probabilities of Numbers (Nekotoryye issledovaniya po
veroyatnostnoy teorii chisel).
S. B. Stechkin - Investigations of the Theory of Power
Series and of Trigonometric Series (Issledovaniya po
teorii stepennykh i trigonometricheskikh ryadov).

Card 2/4
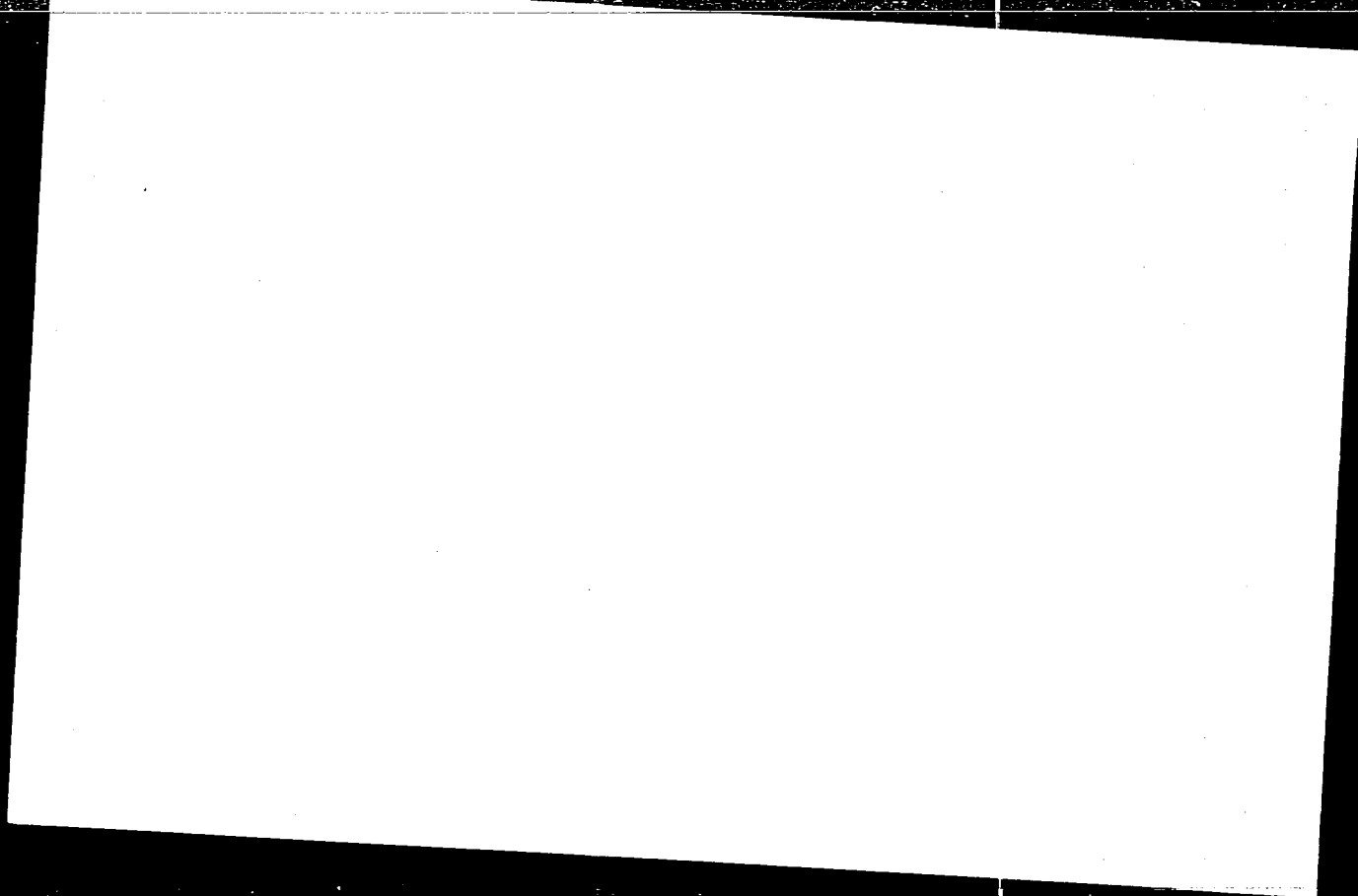
Dissertations. Branch of Physico-Mathematical
Sciences. July-December 1957

30-58-4-29/44

pri nizkikh temperaturakh).
5) At the Institute of Physics and Technics (Fiziko-
-tekhnicheskim Institut) the following dissertations
for the degree of a Candidate of Physico-Mathematical
Sciences were defended:
A. A. Kaplyanskiy - Spectroscopic Investigations in the
Range of the Long Wave Edge of the Main Absorption of
Crystals. (Spektroskopicheskiye issledovaniya v oblasti
dlinnovolnovogo kraya osnovnogo pogloshcheniya kristallov).
N. I. Krivko - Investigation of the Ferromagnetic Reso-
nance in Some Ferrites at Low Temperatures. (Issledovaniye
ferromagnitnogo rezonansa v nekotorykh ferritakh pri niz-
kikh temperaturakh).
V. A. Romanov - The Determination of the Coefficient Re-
lations of the Inner Conversion of γ Radiation on L and M
Shells. (Opredeleniye otnosheniy koeffitsientov vnutrenney
konversii γ-luchey na L i M-podobolochkakh).

1. Physics—Bibliography   2. Bibliography—Physics

Card 4/4

AUTHORS: Konstantinova, V.P., Sil'vestrova, I.M. and
            Aleksandrov, K.S.

SOV/70-4-1-12/26

TITLE: The Growing of Crystals of Triglycine Sulphate and Their
            Physical Properties (Polucheniye kristallov triglitsin-
            sul'fata i ikh fizicheskiye svoystva)

ABSTRACT: A new ferroelectric, triglycine sulphate $(NH_2CH_2COOH)_3H_2SO_4$
             was synthesised by adding 50% H_2SO_4 to a boiling solution
             of technical quality glycine, NH_2CH_2COOH. Small crystals
             were obtained on cooling and two recrystallisations gave
             materials sufficiently pure for growing large crystals
             which were obtained by cooling a saturated solution over
             10 hours from 52 to 25 °C at a rate automatically con-
             trolled to give a constant supersaturation. This sufficed
             to grow crystals of 360 g weight. The measured density
             was 1.68 g/cm³. For physical measurements axes were
             designated as follows: the crystals belong to Class 2 with
             β ~105°, Y is the polar axis, Z the direction parallel

Card 1/4

The Growing of Crystals of Triglycine Sulphate and Their Physical Properties

SOV/70-4-1-12/26

to the natural face of the crystal and X makes an angle of 15° with the c-face. The Curie point is about $49.2 - 49.3$ °C, the ferroelectric axis being in the 2 direction. Dielectric constants were measured with a Q-meter at 500 kc/s on a crystal plate oriented to $\pm 1^\circ$. The values:

$$\varepsilon_{11} = 8.6 \qquad \varepsilon_{33} = 5.7$$

$$\varepsilon_{22} = 43 \qquad \varepsilon_{13} = 0.53$$

were found, the dependence on frequency of ε_{22} from 200 c.p.s. to 10 kc/s at 1, 5 and 10 V/cm being given. The piezoelectric moduli were found to be:

Card 2/4

The Growing of Crystals of Triglycine Sulphate and Their Physical Properties

SOV/70-4-1-12/26

$$d_{21} = 70.7 \pm 0.1 \times 10^{-8} \text{ c.g.s.u.} \quad d_{14} = +8.3 \pm 0.1 \times 10^{-8} \text{ c.g.s.u.}$$

$$d_{22} = 23.8 \pm 0.5$$

$$d_{23} = 76.0 \pm 0.1 \qquad\qquad d_{36} = 8.5 \pm 0.1$$

$$d_{25} = 73.0 \pm 0.3 \qquad\qquad d_{34} = -9.6 \pm 0.5$$

$$d_{16} = -13.7 \pm 0.2 .$$

There were considerable differences from specimen to specimen amounting, for Y-cut crystals, to 15-20%. The elastic moduli were found by an ultrasonic pulse method from a set of six plates with an accuracy of 1-2%. They are:

$$c_{11} = 4.55 \times 10^{11} \text{ dynes/cm}^2$$

$$c_{22} = 3.21 \qquad\qquad c_{31} = 1.98$$

$$c_{33} = 2.63 \qquad\qquad c_{12} = 1.72$$

$$c_{44} = 0.95 \qquad\qquad c_{15} = -0.30$$

Card3/4 $\quad c_{55} = 1.11 \qquad\qquad c_{25} = -0.036$

$$c_{35} = -0.5$$

The Growing of Crystals of Triglycine Sulphate and Their Physical Properties   SOV/70-4-1-12/26

$$c_{66} = 0.62$$

$$c_{46} = -0.026$$

$$c_{23} = 2.08$$

Card 4/4

AUTHORS: Shuvalov, L.A., Aleksandrov, K.S. and Zheludev, I.S.

SOV/70-4-1-26/26

TITLE: On the Question of the Domain Structure of Crystals of Triglycine Sulphate (K voprosu o domennoy strukture kristallov triglitsinsul'fata)

PERIODICAL: Kristallografiya, 1959, Vol 4, Nr 1, pp 130 - 132 (USSR)

ABSTRACT: $(NH_2CH_2COOH)_3 \cdot H_2SO_4$ is isomorphous with the selenate and the fluoberyllate and several other ferroelectrics which pass from the class $2/m \leftrightarrows 2$ at the Curie point. Possible ways in which the domains can be twinned are discussed here. Besides the symmetry of the transition $2/m \leftrightarrows 2$ the only other assumption is that in the ferroelectric state with no imposed field, the mosaic crystal has no overall moment. Two and only two mutual orientations of the domains are found. These are:

Card1/3

On the Question of the Domain Structure of Crystals of Triglycine Sulphate

SOV/70-4-1-26/26
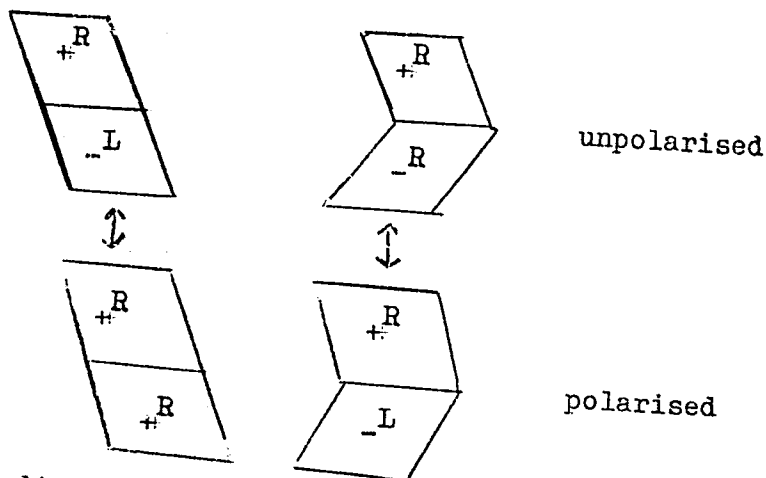
unpolarised

polarised

"+" indicates polarisation towards the observer and "-" the opposite. The left possibility has the symmetry 2 (the symmetry of a single domain) in the polarised state whereas the right possibility has the symmetry 2/m . In

Card2/3

On the Question of the Domain Structure of Crystals of Triglycine
Sulphate

SOV/70-4-1-26/26

the latter case the moduli d_{14}, d_{25} and d_{36} vanish.
If the left variant obtains then only one enantiomorphous
form remains after the transition. Here, in contra-
distinction to the case of Rochelle salt, mechanical strains
do not accompany the polarisation. Such a transition, from
one enantiomorph to the other, has not been reported before.
The right variant would also have similar transitions.
Both types of transitions are expected to exist.
There are 1 figure and 8 references, 3 of which are Soviet,
3 English and 2 international.

ASSOCIATION: Institut kristallografii AN SSSR (Institute of
Crystallography of the Ac.Sc., USSR)
Krasnoyarskiy institut fiziki AN SSSR (Krasnoyarsk
Institute of Physics of the Ac.Sc., USSR)

SUBMITTED: October 21, 1958

Card 3/3

USCOMM-DC-61,278

HLEKSANDROV, K.S.

Vsesoyuznaya konferentsiya po fizike dielektrikov, 2d, 1958.

Fizika dielektrikov; trudy vtoroy vsesoyuznoy konferentsii. (Physics of Dielectrics; Transactions of the 2d All-Union Conference on the Physics of Dielectrics) Moscow, Izd-vo AN SSSR, 1960. 532 p. Errata slip inserted. 5,000 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Fizicheskiy institut imeni P.N. Lebedeva.

Ed. of Publishing House: Ye.A. Sterkhimskaya; Tech. Ed.: I.N. Dorokhina; Editorial Board (Resp. Ed.): G.I. Skanavi, Doctor of Physics and Mathematics (Deceased), and K.V. Filippov, Candidate of Physics and Mathematics.

PURPOSE: This collection of reports is intended for scientists investigating the physics of dielectrics.

COVERAGE: The Second All-Union Conference on the Physics of Dielectrics held in Moscow at the Physics Institute imeni P.N. Lebedev (Physics Institute imeni P.N. Lebedev) in November 1958 was attended by representatives of the principal scientific centers of the USSR and of several other countries. This collection contains most of the reports presented at the conference and summarizes the discussions which followed. The reports in this collection deal with dielectric properties, losses, and polarization, and with specific inductive capacitance of various crystals, chemical compounds, and ceramics. Photo-electric, ferroelectric crystals, and various radiation effects are investigated. The collection contains a list of other papers presented at the conference dealing with polarization, losses, and breakdown of dielectrics, which were published in the journal Izvestiya AN SSSR, seriya fizicheskaya, No. 2, 1960. No personalities are mentioned. References accompany each report.

Zheludev, I.S., A.I. Agranovskaya, I.A. Izyumov, and S.N. Popov. New Ferroelectric Crystals of Complex Composition [Institute of Crystallography, AS USSR] 333

Kopteik, V.A. Geometric Model for the Description of Polymorphous Phase Transitions in Crystals [Physics Division, Moscow State University imeni M.V. Lomonosov] 339

Konstantinova, V.P., I.M. Sil'vestrova, and L.A. Shuvalov. Domain Structure and Certain Physical Properties of Polarized Triglycine Sulfate Crystals [Institute of Crystallography, Academy of Sciences USSR, Moscow] 347

Smits, A.S., and Zheludev, I.S. See Crystallochemical Problem of Ferro-electric Crystals With a Hydrogen Bond [Institute of Crystallography, AS USSR, Moscow] 351

Vishnevskiy, P.I., P.K. Aleksandrov, and I.S. Sinitsyna. Effect of Oxides on the Electrical Properties of Barium Titanate 366

Chernov, P.K. Electrical Properties of the BaTiO₃ - "Cdoq" System [Dnepropetrovsk University; Dnepropetrovsk State University] 372

Zaludev, I.S., L.S. Per..., V.S. Smin, V.V. Glushko, Y.N. Gavrichk..., P.A. Sulfate-Kozabylite (?)[?]. Dielectric Properties of Gvazadino-Lithium-tri-Scientific (..), [Electr. and L. Laboratory of Piezotechnik (Cen-tral Scientific-Research Laboratory of Piezotechnology) Institute of Crystallography] 385

Shuvalov, L.A., and O.A. Seugoov. Effect of Small Addition Agents V₂O₅ on the Electrical Properties of Polycrystal BaTiO₃ [Dnepropetrovsk State Uni-versity] 393

Per..., L.S., and I.N. Gurevich. Problem of the Connection Between Electric Conductivity of Ferroelectric Crystals and Ferroelectricity [Central Scien-tific-Research Laboratory of Piezotechnology, Moscow] 404

Card 11/15 410

ALEKSANDROV, K.S.; KLEVTSOV, P.V.; NERONOVA, N.N.

Fifth International Congress on Crystallography. Zhur. strukt.
khim. 1 no. 4:504-507 N-D '60.
                 (MIRA 14:2)
                (Crystallography—Congresses)

24.6100

78103
SOV/70-5-1-12/30

AUTHORS: Aleksandrov, K. S., Lundin, A. G., Mikhaylov, G. M.

TITLE: Concerning the Distribution of Hydrogen Atoms in the Structure of Guanidine Aluminum Sulfate Hexahydrate

PERIODICAL: Kristallografiya, 1960, Vol 5, Nr 1, pp 84-88 (USSR)

ABSTRACT: The ferroelectric single crystals of $C(NH_2)_3$ $Al \cdot (SO_4)_2 \cdot 6H_2O$ had in the past been studied by the method of nuclear magnetic resonance, and their symmetry $3m$, space group C_{3v}^2 - $P31m$, $a = 11.737$ A, $c = 8.949$ A were known as well as the presence of 3 molecular weights per unit cell of octahedral $Al(H_2O)_6$, tetrahedral SO_4, and triangular $C(NH_2)_3$ groups in their structures. Using the same method, the authors sought to establish the distribution of hydrogen atoms in their structure. The authors reject one of the two possible proton dispositions suggested by R. Spence and J. Muller for

Card 1/5

Concerning the Distribution of Hydrogen
Atoms in the Structure of Guanidine   78103
Aluminum Sulfate Hexahydrate   SOV/70-5-1-12/30

the guanidine group, and mention D. McCall's data
without comment. For their own experiments they used
specimens in the form of orthorhombic prisms,
$1.5 \times 1.2 \times 1.1$ cm^3, from the crystals transverse to
X, Y, Z axes. The absorption spectra from these
prisms were obtained by taking measurements after
each turn of the magnetic field for 15^0 around X, Y,
or Z axis. The periodicity of the obtained curves
was 60^0 and pointed to the rhombohedral symmetry of
crystals. As determined according to the maximum
split of absorption lines in a field parallel to Y
axis, one of the p - p vectors of the molecules of
crystallization water was parallel to the magnetic
field and two others under 60^0 to it. When the
magnetic field was parallel to Z axis (3-fold rotor)
of the crystal, all the 3 p - p vectors produced
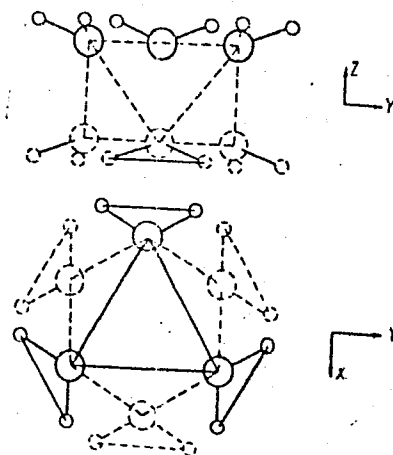equal split of absorption lines, indicating that the

Card 2/5

Concerning the Distribution of Hydrogen
Atoms in the Structure of Guanidine   78103
Aluminum Sulfate Hexahydrate   SOV/70-5-1-12/30

vectors lie on a plane normal to Z. The experiments
permitted drawing of the model shown in Fig. 3.

Fig. 3. Model showing
distribution of
hydrogen atoms (small
circles) around oxygen
atoms (large circles)
which form an octa-
hedron around Al of
guanidine aluminum
sulfate.

Card 3/5

Concerning the Distribution of Hydrogen
Atoms in the Structure of Guanidine   78103
Aluminum Sulfate Hexahydrate   SOV/70-5-1-12/30

The bond angle H-O-H is close to 105°; both N -
to - H and O - to - H distances are close to 1.00 A,
while H - to - H is 1.63 A. The experiments proved
that all NH_2 triangles in $C(NH_2)_3$ group lie on one
plane. The model still needs refinement. The
structure changes accompanying spontaneous polari-
zation and taking place in an applied field are not
yet clear. S.P. Gabude is acknowledged for help in
calculations and discussions. There are 3 figures;
and 8 references, 4 U.S., 3 Soviet, 1 Danish. The
U.S. references are: R. Spence, J. Muller, J. Chem.
Phys., 26, 3, 706 (1957); D. McCall, J. Chem. Phys.,
26, 3, 706 (1957); A. Holden, B. Matthias, W. Merz,
J. Remeika, Phys. Rev., 98, 2, 546 (1955); L. Pauling,
Nature of the Chemical Bond, Cornell University Press,
1948.

ASSOCIATION: Institute of Physics of the Siberian Branch of the
                Academy of Sciences of the USSR and Siberian Techno-
Card 4/5   logical Institute (Institut fiziki Sibirskogo

Concerning the Distribution of Hydrogen
Atoms in the Structure of Guanidine
Aluminum Sulfate Hexahydrate

78103
SOV/70-5-1-12/30

otdeleniya AN SSSR i Sibirskiy tekhnologicheskiy
institut)

SUBMITTED: July 6, 1959

Card 5/5

S/046/60/006/02/03/019
B014/B014

AUTHORS: Aleksandrov, K. S., Gurovits, L. S., Kamenskiy, Ye. I.
              (Moscow)

TITLE: Effect of an Intermediate Layer on the Frequency Character-
              istics of Ultrasonic Delay Lines

PERIODICAL: Akusticheskiy zhurnal, 1960, Vol. 6, No. 2, pp. 171-179

TEXT: In the present paper, the authors derive general formulas for the
coefficients of piezoelectric conversion, taking account of the effect   /B
of intermediate layers for the case of unilateral and symmetric loading
of the converter. Proceeding from the general form of A. A. Kharkevich's
theory of piezoelectric converters (Refs. 1 and 2) the authors derive
formulas (3) and (4) for the coefficients of unilateral and symmetric
loading, respectively. The equivalent-circuit diagram of a converter
shown in Fig. 2 in the form of a four-terminal network is used for this
purpose. (4) indicates that the conversion losses at resonance frequency
under symmetric loading are four times higher than under unilateral
loading. An analysis of the formulas derived and calculations of a large

Card 1/2

Effect of an Intermediate Layer on the Frequen-   S/046/60/006/02/03/019
cy Characteristics of Ultrasonic Delay Lines   B014/B014

number of frequency characteristics were carried out by means of
electronic computers for the purpose of deriving a general rule for the
frequency characteristic and the bandwidth of transmission. Next, the
authors state that all combinations of converters, ultrasonic polygons,
and intermediate layers can be reduced to three typical cases. First,
the authors study intermediate layers of oil, rubber, plastics, and other
materials with low acoustical resistance; secondly, intermediate layers
with an acoustical resistance between that of the sound conductor and
the converter; and thirdly, metallic intermediate layers with high
acoustical resistance. The method of calculation set up here makes it
possible to explain the shift of the peaks of the frequency character-
istic relative to the resonance frequency of the converter, and to
calculate them for the production of converters and for the technical
planning of delay lines. The authors thank Yu. B. Kobzarev for his help-
ful advice and assistance, as well as T. V. Ryaplova, L. V. Suchkova, and
S. P. Pavchinskaya for their assistance in experiments. There are
6 figures, 2 tables, and 9 references: 7 Soviet and 2 American.

SUBMITTED: December 27, 1958

Card 2/2

84997

9.2180

S/048/60/024/010/006/033
B013/B063

AUTHORS: Lundin, A. G., Aleksandrov, K. S., Mikhaylov, G. M., and Gabuda, S. P.

TITLE: Study of Some Piezoelectric Substances by the Method of Nuclear Magnetic Resonance /9

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1960, Vol. 24, No. 10, pp. 1195-1197

TEXT: The application of the method of nuclear magnetic resonance to the study of polycrystalline specimens is dealt with. This method served for examining polycrystalline specimens of Rochelle salt, triglycine sulfate and potassium ferrocyanide. The tests were conducted within a temperature range covering the phase transition points of these substances. For an increase of the signal level, the specimens which had a volume of about 2 cm^3, were pressed by applying a pressure of 100 kp/cm^{-2}. The experimental arrangement is described in Ref. 8. The following results were obtained: Rochelle salt - $KNaC_4H_4O_6 \cdot 4H_2O$: at a temperature of $+23°C$ (Fig. 1, 1) the second moment exhibits a jump of 4 oe^2. This is in agree-

Card 1/2

Study of Some Piezoelectric Substances by the   84997
Method of Nuclear Magnetic Resonance   S/048/60/024/010/006/033
                                                 B013/B063

ment with the data of Ref. 6. No modification of the second moment was
observed in the region of the lower Curie point. Triglycine sulfate -
$(NH_3CH_2COO)_3 \cdot H_2SO_4$: Curve 2 (Fig. 1) shows that the second moment retains
the same magnitude in a wide temperature range, and amounts to ~ 8 oe^2.
Experimental results do not contradict the data of Ref. 10. Potassium
ferrocyanide $K_4Fe(CN)_6 \cdot 3H_2O$: The piezoelectric phase transition at $-22°C$
was discovered in 1959 (Ref. 11). Curve 3 (Fig. 1) shows the change of
the line width with phase transition. Fig. 2 gives the modification in
the form of the resonance line derived on the passage through the Curie
point. P. P. Kobeko and I. V. Kurchatov are mentioned. The present paper
was read at the Third Conference on Piezoelectricity, which took place
in Moscow, from January 25 to 30, 1960. There are 2 figures and 13
references: 4 Soviet.

ASSOCIATION: Institut fiziki Sibirskogo otdeleniya Akademii nauk SSSR
                (Institute of Physics of the Siberian Branch of the
                Academy of Sciences USSR)

Card 2/2

ALEKSANDROV, K.S.; RYZHOVA, T.V.

Modulus of elasticity of pyrite. Izv.Sib.otd.AN SSSR no.6:43-47
'61.
(MIRA 14:6)

1. Institut fiziki Sibirskogo otdeleniya AN SSSR, Krasnoyarsk.
(Pyrite)   (Elasticity)

ALEKSANDROV, K.S.; RYZHOVA, T.V.

Elastic properties of rock-forming minerals; pyroxenes and amphiboles. Izv. AN SSSR. Ser. geofiz. no.9:1339-1344 S '61.
(MIRA 14:9)

1. Akademiya nauk SSSR, Sibirskoye otdeleniye, Institut fiziki.
(Pyroxenes) (Amphiboles) (Elasticity)

ALEKSANDROV, K.S.; RYZHOVA, T.V.

Elastic properties of rock-forming minerals. Izv. AN SSSR. Ser.
geofiz. no.12:1799-1804 D '61.   (MIRA 14:12)

1. Institut fiziki Sibirskogo otdeleniya AN SSSR.
                        (Silicates) (Elasticity)

ALEKSANDROV, K.S.; RYZHOVA, T.V.

        Elastic properties of crystals. Kristallografiia 6 no.2:289-316
        Mr-Ap '61.   (MIRA 14:9)

        1. Institut kristallografii AN SSSR.
                        (Elasticity) (Crystals)

KOSTIN, N.F.; LUBENETS, S.V.; ALEKSANDROV, K.S.

Selective etching of sodium chloride crystals. Kristallografiia
6 no.5:737-744 S-O '61.
(MIRA 14:10)

1. Institut fiziki Sibirskogo otdeleniya AN SSSR.
(Salt)   (Crystallography)

MIKHAYLOV, G.M.; LUNDIN, A.G.; GABUDA, S.P.; ALEKSANDROV, K.S.

Proton magnetic resonance in selenurea. Dokl. AN SSSR 141 no.6:
1406-1408 D '61.   (MIRA 14:12)

1. Institut fiziki Sibirskogo otdeleniya AN SSSR i Sibirskiy
tekhnologicheskiy institut. Predstavleno akademikom V.N.Kondrat'-
yevym.
     (Urea) (Nuclear magnetic resonance and relaxation)

ALEKSANDROV, K.S.; RYZHOVA, T.V.

Elastic properties of rock-forming minerals.   Izv. AN SSSR.
Ser. geofiz. no.2:186-189 F '62.   (MIRA 15:2)

1. Sibirskoye otdeleniye AN SSSR, Institut fiziki.
            (Feldspar)
            (Elasticity)

ALEKSANDROV, K.S.; RYABINKIN, L.N.

Elastic properties of ammonium dihydrophosphate and the
Laval-Raman theory of elasticity. Dokl. AN SSSR 142 no.6:1298-
1300 F '62.   (MIRA 15:2)

1. Institut fiziki Sibirskogo otdeleniya AN SSSR. Predstavleno
akademikom A.V.Shubnikovym.
                    (Elasticity)
                    (Ammonium phosphate)

ALEKSANDROV, K.S.

Reflection of elastic shear waves from the interface of two anisotropic media. Kristallografiia 7 no.5:735-741 S-O '62.   (MIRA 15:12)

1. Institut fiziki Sibirskogo otdeleniya AN SSSR.
          (Wave)   (Crystals)

ALEKSANDROV, K.S.; RYZHOVA, T.V.; ROSTUNTSEVA, A.I.

Elastic properties of crystals of the heptahydrated sulfate group.
Kristallografiia 7 no.6:930-933 N-D '62.   (MIRA 16:4)

1. Institut fiziki Sibirskogo otdeleniya AN SSSR.
                (Crystals—Elastic properties)

TALASHKEVICH, I.P.; ALEKSANDROV, K.S.

Effect of preferred grain orientation on the elastic properties.
Fiz.met.i metalloved. 14 no.6:801-805 D '62.   (MIRA 16:2)

1. Institut fiziki Sibirskogo otdeleniya AN SSSR.
(Crystal lattices)
(Metal crystals--Elastic properties)

RYZHOVA, T.V.; ALEKSANDROV, K.S.

Elastic properties of rock-forming minerals. Report No.2:
Nepheline. Izv.AN SSSR. Ser.geofiz. no.12:1799-1801 '62.
(MIRA 16:2)
1. Institut fiziki, Sibirskoye otdelneiye AN SSSR.
(Nephelite—Elastic properties)

ALEKSANDROV, K. S.

"NMR-studies of the phase transitions in ferroelectrics."

report presented at the Symposium on Phase Transitions in Solids, 6th General Assembly, Intl. Union of Crystallography, Rome, Italy, 16-18 Sep 1963.

(Institute of Physics, Siberian Department, Academy of Sciences, Krasnojarsk, USSR)

S/070/63/008/002/004/017
E021/E120

AUTHORS: Aleksandrov K.S., Belikova G.S., Ryzhenkov A.P.,
            Teslenko V.R., and Kitaygorodskiy A.I.

TITLE: Elastic constants of molecular crystals.
            Elastic constants of naphthalene

PERIODICAL: Kristallografiya, v.8, no.2, 1963, 221-224

TEXT: A study of the elastic constants is the main method of
investigating the laws of interaction of molecules, a knowledge of
which is necessary for constructing a theory of the properties of
organic crystals. Coarse crystals of naphthalene grown from the
melt and annealed for three days were studied. The orientation of
the crystals was found by X-ray measurements. Measurements of the
rate of propagation of elastic waves in the crystal were carried
out using ultrasonic apparatus at frequencies of 1.7 and 5.0
megacycles. The waves were propagated in six different directions:
[001] , [110] , [010] , [101] , [100] and [011].
The rates of propagation in three directions at right angles were
measured in each case. From the results the moduli of elasticity
Card 1/2