

L 24179-66 EWT(m)/EPF(n)-2 GG

SOURCE CODE: UR/0058/65/000/009/ELIO/ELII

ACC NR: AR6005228

AUTHOR: Andronikashvili, E. L.

24
3

TITLE: Effect of nuclear radiation on the properties of alkali-halide crystals

SOURCE: Ref. zh. Fizika, Abs. 9E916

REF. SOURCE: Sb. Elektron. ionnyye protsessy v tverd. telakh. No. 1. Tbilisi, Metsniyereba, 1964, 5-12

TOPIC TAGS: gamma irradiation, neutron irradiation, alkali halide, potassium chloride, lithium fluoride, color center

ABSTRACT: Part of a paper delivered at the symposium on radiation damage in solids (Venice, 1962). An analysis is presented of original results and of data by other workers on the influence of x-ray, gamma, and neutron irradiation on various types of hardness of KCl and LiF single crystals and the formation of color centers in them.

SUB CODE 20

Card 1/1 *FV*

L 33173-66 EWT(1)/T IJP(c) GG

ACC NR: AR6016236

SOURCE CODE: UR/0058/65/000/011/EO90/EO90

AUTHOR: Andronikashvili, E. L.; Politov, N. G.; Vorzheykina, L. Ya.; Abramishvili, M. G.TITLE: Influence of structure defects on the mechanical properties of crystals 35

SOURCE: Ref. zh. Fizika, Abs. 11E695 B

REF SOURCE: Sb. Elektron. i ionnyye protsessy v tverd. telakh. No. 1, Tbilisi, Metsniyereba, 1964, 13-30

TOPIC TAGS: crystal defect, irradiation effect, potassium compound, hardness, color center, Gamma irradiation, x ray irradiation, neutron irradiation

ABSTRACT: An investigation was made of the influence of irradiation by x rays, γ rays, and neutrons at ordinary temperatures and at liquid-nitrogen temperature on the hardness of KCl and LiF crystals. Three types of hardness were measured: the microhardness H_m , the scratch hardness H_s , and hardness based on the damping of pendulum oscillations H_p . It is shown that as a result of the F-center formation under irradiation with x rays the KCl crystal becomes softer. The discoloring leads to restoration of the H_p hardness. LiF crystals harden when irradiated with x and γ rays independently of F-center formation. Irradiation of KCl crystals influences differently different types of hardness. It is shown that H_s , which decreases upon irradiation at ordinary temperatures, increases after irradiation at low temperatures. When crystals are neutron-irradiated, all three types of hardness increase even

Card 1/2

L 33173-66

ACC NR: AR6016236

during the first stage of irradiation. Low-temperature irradiation of LiF crystals leads to a smaller radiation hardening than irradiation at ordinary temperatures. The process of radiation hardening is completely reversible: annealing of crystals at 600C for 3 hours completely eliminates the hardening. The influence of isothermal annealing at 300 and 700C is demonstrated. B. Prusakov. [Translation of abstract]

SUB CODE: 20

Card 2/2mc

L 24185-66 EWT(1)/T IJP(c) GG

ACC NR: AR6005229

SOURCE CODE: UR/0058/65/000/009/E111/E111

AUTHOR: Andronikashvili, E. I.; Politov, N. G.; Getiya, M. Sh.

46

TITLE: Radiative changes in the density of dislocations in ionic crystals

B

SOURCE: Ref. zh. Fizika, Abs. 9E917

REF SOURCE: Sb. Elektron. i ionnyye protsessy v tverd. telakh. No. 1. Tbilisi, Metsniyereba, 1964, 31-41

TOPIC TAGS: crystal dislocation, potassium chloride, lithium fluoride, neutron bombardment, annealing, crystal surface, ionic crystal, single crystal

TRANSLATION: The authors present results of an investigation of the density of dislocations (D) in single crystals of KCl and LiF bombarded by neutrons in a reactor. The method of chemical etching was used to display the D. The dependence of the dislocation density on the radiation dose has several maxima and minima, thus evidencing that during the course of the irradiation competing processes which lead to an increase and decrease in the number of dislocations occur in the crystals. Effects of hardening of the crystals and of "rejuvenation" of old dislocations under the influence of irradiation are observed. It is indicated that isochronous annealing for three hours at 300C leads to an appreciable change in the dislocation picture, and at 700C no dislocations remain in the crystal and its surface becomes covered by a large number of pores. The dislocations can be extracted by annealing from the irradiated crystals more easily than from non-irradiated ones. Yu. Tyutrin.

SUB CODE: 20

Card 1/1 *FV*

ACC NR: AT7000178

SOURCE CODE: UR/3182/65/002/000/0014/0018

AUTHOR: Andronikashvili, E. L.; Politov, N. G.; Abramishvili, M. G.

ORG: none

TITLE: The formation of color centers in alkali halide crystals irradiated in a reactor at usual and low temperatures

SOURCE: AN GruzSSR. Institut fiziki. Elektronnyye i ionnyye protsessy v tverdykh telakh, v. 2, 1965, 14-18

TOPIC TAGS: color center, neutron irradiation, irradiation effect, crystal absorption, crystal lattice dislocation, gamma irradiation, *alkali halide*

ABSTRACT: An investigation was made of the coloring of lithium fluoride and potassium chloride crystals irradiated in the vertical experimental channel of a reactor at room temperature (300K) and in low-temperature loops at 300K, 155K, and 110K. The IRT reactor at the Physics Institute of the Academy of Sciences of the Georgian SSR was used for the low-temperature measurements. The measurements of optical absorption by LiF crystals irradiated in a reactor channel with $n\nu = 3.2 \times 10^{12}$ neutron/cm²sec showed that with an increase in irradiation time the coloring increased nonmonotonically: the maxima were replaced by minima. Apparently, both neutrons and gamma-quanta contribute to the coloring. The comparison of results showed that in a channel with a weaker intensity of neutron flux and with a gamma-screen the specimens were

Card 1/2

ACC NR: AT7000180

SOURCE CODE: UR/3182/65/002/000/0027/0034

AUTHOR: Andronikashvili, E. L.; Vorozheykina, L. F.; Igitkhanishvili, D. D.; Politov, N. G.

ORG: none

TITLE: Radiative changes in the conductivity of KCl and LiF crystals

SOURCE: AN GruzSSR. Institut fiziki. Elektronnyye i ionnyye protsessy v tverdykh telakh, v. 2, 1965, 27-34

TOPIC TAGS: neutron irradiation, gamma irradiation, crystal dislocation, crystal defect

ABSTRACT: An investigation was made of the relationship between the ionic conductivity and the activation energy of carriers in KCl and LiF crystals caused by reactor irradiation. The temperature dependence of ionic conductivity was investigated in the range from 50 to 400C. The heating of the specimens was carried out at a constant rate of 1 °C/min.. The measurements were made in a vacuum of 10^{-4} mm Hg. The specimens were irradiated in the IRT reactor of the Physics Institute of the Academy of Sciences, Georgian SSR at a point where the thermal neutron flux was 2.07×10^{12} neutrons/cm²·sec. The conductivity was measured before and after irradiation with specimens produced from a single ingot. Radiative changes in conductivity accompanied sharp changes in the crystal microstructure following

Card 1/2

ACC NR: AR7000878 SOURCE CODE: UR/0058/66/000/009/E091/E091

AUTHOR: Andronikashvili, E. L.; Politov, N. G.; Getiya, M. Sh.; Galustashvili, M. V.

TITLE: Radiation-induced changes in dislocation density in lithium fluoride crystals irradiated in a reactor at normal and low temperatures

SOURCE: Ref. zh. Fizika, Abs. 9E731

REF SOURCE: Sb. Elektron. i ion. protsessy v tverd. telakh. No. 2, Tbilisi, Mitsniyereba, 1965, 3-13

TOPIC TAGS: crystal dislocation, lithium fluoride, dislocation density, lithium fluoride crystal

ABSTRACT: Changes in dislocation density (DD) was observed in LiF crystals irradiated at 155 and 110K in the reactor of IRT IF AN GSSR. Irradiation at lower temperatures resulted in a lesser relative change in DD. High-temperature annealing of LiF crystals was also studied. During annealing at sufficiently high-temperatures, DD is found to drop to lower than initial values. The supposition expressed by the authors previously on the "condensing" mechanism of the radiative

Card 1/2

ACC NR: AR7000877 SOURCE CODE: UR/0058/66/000/009/E090/E090

AUTHOR: Andronikashvili, E. L.; Politov, N. G.; Abramishvili, M. G.

TITLE: Formation of coloration centers in alkaline halide crystals exposed to irradiation in a reactor at room and low temperatures

SOURCE: Ref. zh. Fizika, Abs. 9E721

REF SOURCE: Sb. Elektron. i ion. protsessy v tverd. telakh, No. 2, Tbilisi, Metsniyereba, 1965, 14-18

TOPIC TAGS: color center, crystal dislocation, alkali halide, crystal absorption, crystal coloration, irradiation coloration

ABSTRACT: Kinetics of the coloration of LiF and KCl crystals was investigated following irradiation in an IRT IF ANGSSR reactor at 300, 155, and 110K. The coloration intensity was determined by the absorption coefficient for $\gamma=300 \mu\mu$. The dose-related coloration intensity proved to be nonmonotonic. During irradiation with neutron flux of lesser intensity and using a γ -screen, the coloration of crystals was found to be weaker, although the qualitative shape of the dose curve remained unchanged. Concomitantly a more intensive generation of dislocations

Card 1/2

ACC NR: AR7000877

took place. It was established that the coloration intensity of KCl crystals was stronger when crystals were exposed for shorter irradiation periods in the reactor and that the coloration was weaker than that of LiF crystals during longer exposure to irradiation. This seems to be in contradiction with data already published concerning a higher accumulation rate of coloration centers during γ -irradiation of crystals with a lower lattice energy. This discrepancy is reconciled on the basis of the lithium nuclear reaction occurring in $\text{Li}^6 (n, \alpha) \text{H}^3$. The agreement of the maximum dislocation density with the minimum of F-centers concentration is explained as due to the irradiation dose which determines two competitive processes: vacancies condensation and electron capture by the vacancies. A. Kiv.
[Translation of abstract] [AM]

SUB CODE: 20/

Card 2/2

ACC NR: AR7000879

SOURCE CODE: UR/0058/66/000/009/E092/E092

AUTHOR: Andronikashvili, E. L.; Vorozheykina, L. F.; Igitkhanishvili, D. D.; Politov, N. G.

TITLE: Radiation-induced changes in the conductivity of potassium chloride and lithium chloride crystals

SOURCE: Ref. zh. Fizika, Abs. 9E736

REF SOURCE: Sb. Elektron. i ion. protsessy v tverd. telakh. No. 2. Tbilisi, Metsniyereba, 1965, 27-34

TOPIC TAGS: potassium chloride crystal, lithium chloride crystal, radiation, ion conductivity, activation energy, carrier activation energy, thermal neutron, radiation defect

ABSTRACT: A study was made of changes in the ion conductivity and the activation energy of carriers in KCl and LiF crystals irradiated with thermal neutrons at a flux density of $2.07 \cdot 10^{12} \text{ cm}^{-2} \text{ sec}^{-1}$ using a reactor of the Institute of Physics of the Academy of Sciences USSR. The activation energy was determined from

Card 1/2

ACC NR: AR7000879

measurements of conductivity as a function of temperature within the 50—400C range. At relatively small radiation dosages conductivity was found to decrease with an increase in the activation energy; at the "critical" radiation dosage, of the order of $1.2 \cdot 10^{16} \text{ cm}^{-2}$, the activation energy reaches a minimum and conductivity a maximum, corresponding to a change by two orders of magnitude. The defects induced by radiation in KCl are thermally more stable than in LiF.

[Translation of abstract]

[SP]

SUB CODE: 20/

Card 2/2

ACC NR: AT7000177

SOURCE CODE: UR/3182/65/002/000/0003/0013

AUTHOR: Andronikashvili, E. L.; Politov, N. G.; Getiya, M. Sh. Galustashvili, M. V.

ORG: none

TITLE: Radiative variation of dislocation density in alkali halide crystals irradiated in a reactor at normal and low temperatures

SOURCE: AN GruzSSR. Institut fiziki. Elektronnyye i ionnyye protsessyy i tverdykh telakh, v. 2, 1965, 3-13

TOPIC TAGS: lithium fluoride, alkali halide, neutron irradiation, gamma irradiation, crystal dislocation phenomenon

ABSTRACT: Samples were irradiated in the Institute of Reactor Technology at 155 and 110K at the Institute of Physics, AN GruzSSR. The dependence of dislocation density on irradiation time and temperature was studied. Dislocation density was determined in two ways: 1) the number of dislocations were counted in random portions of a series of irradiated samples with the aid of a standard, and 2) the relative variation in dislocation density on irradiated surfaces was determined by comparison with a control surface of one sample (mirror crystal method). The latter method is more accurate. Curves are plotted for the number of dislocations in LiF crystals as dependent on irradiation time in the vertical experimental reactor channel ($\nu = 1.1 \cdot 10^{12}$ neutrons/cm² sec, 85 mm thick lead target attenuating the gamma radiation), in the verti-

Card 1/2

ACC NR: AT7000177

cal low temperature loop ($n\dot{\nu} = 5.5 \cdot 10^{11}$ neutrons/cm² sec), and in the horizontal low temperature loop ($n\dot{\nu} = 1.8 \cdot 10^{12}$ neutrons/cm² sec). More radiation-generated dislocations and fewer vacancies occurred in samples exposed to the attenuated gamma radiation. The dislocations in these crystals apparently form from the condensation of point defects. The ratio D/D_0 was measured after sample irradiation in a beam of $1.8 \cdot 10^{12}$ neutrons/cm² sec at 100K in a range of energies from $3 \cdot 10^{14}$ to 10^{15} nvt. The ratio increases with increase in irradiation time, and the dislocation density at 110K is about 20% less than at 300K. Results at 155K coincide with those at 300K. The effect of annealing on dislocation density is described. The dependence of dislocation density in LiF crystals on the temperature during irradiation confirms the condensation theory of dislocation generation. Selective etching of the test samples revealed the nature and distribution of point defects. Microphotographs of crystals etched after irradiation show extensive pitting, which increases with higher dosages. Effects of irradiation and subsequent annealing on the density and nature of pitting and the mechanical properties of the crystals are described. From the experimental data it is concluded that irradiation causes point defects to merge. These defects have greater dynamic resistance to the motion of dislocations than do individual vacancies, interstitial atoms, and individual impurity atoms. Annealing causes the point defects to unite into plane cavities. The annealing time and temperature and the rate of cooling all affect the mechanical properties of the irradiated crystals. The authors thank L. F. Vorozheykina for making the microhardness measurements, M.F. Zhvaniy for monitoring the neutron beams, and G. N. Garevanishvili and G. I. Ayvazov for irradiating the samples. Orig. art. has: 7 figures, 4 tables. [WA-95]

SUB CODE: 20,11/ SUBM DATE: none/ ORIG REF: 007/ OTH REF: 003
Card 2/2

ACC NR: AF6037063

SOURCE CODE: UR/0056/66/051/005/1344/1347

AUTHOR: Andronikashvili, E. L.; Tsakadze, D. S.

ORG: Institut of Physics, Academy of Sciences, Georgian SSR (Institut fiziki Akademii nauk Gruzinskoy SSR)

TITLE: Condensation of rotating helium II and the jump of its density at the phase transition point

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 51, no. 5, 1966, 1344-1347

TOPIC TAGS: liquid helium, quantum liquid, low temperature research, phase transition, second order phase transition, critical point

ABSTRACT: To determine the velocity dependence of the density of helium II, the authors have undertaken an experiment in which sensitive pycnometers are set in rotation. The pycnometer is briefly described and a formula for the increase in the density as a function of the level difference of the pycnometer is presented. The measurements have shown that the lower the temperature the greater the density of the rotating helium II, and that this phenomenon cannot be attributed to centrifugal pressure. A special investigation in the temperature interval 2.14 - 2.18K (straddling the phase-transition point), using a fixed amount of liquid in the pycnometer, has shown the density to experience a discontinuity characteristic of a first-order phase transition, amounting to 0.02% of the density of the liquid. It is concluded

Card 1/2

ANDRONIKASHVILI, K.I., inshener.

Determining the most economic road routes depending on the transportation
service plan. Avt.dor.19 no.8:19-20 Ag '56. (MLRA 9:10)
(Roads)

ANDRONIKASHVILI, R.

Veterinary and sanitary cysticercus inspection of cattle
carcasses and organs. *Mias.ind.SSSR* 31 no.2:36 '60.

(MIRA 13:8)

1. Tbilisskiy myasokombinat.
(Cattle--Diseases and pests)

ANDRONIKASHVILI, R. V.

Quality control must be simplified. Mias. ind. SSSR. 30 no.4:25
'59. (MIRA 12:12)

1. Tbilisskiy myasokombinat.
(Sausages--Quality control)

ANDRONIKASHVILI, R. V. (Tbilisi Meat-Combine)

"Veterinarysanitary inspection of carcasses infested with tapeworm (Cestodae)."

Veterinariya, Vol. 37, no. 9, p. 80, 1960.

ANDRONIKASHVILI, R.V.

Veterinary and sanitary expertise on animal carcasses infected
with cysticercosis. Veterinariia 37 no.9:80-81 ~~1960~~. (MIRA 14:11)

1. Tbilisskiy myasokombinat.
(Cysticercosis) (Meat inspection)

TSITSISHVILI, G.V., akademik; ANDRONIKASHVILI, T.A.; CHUMBURIDZE, T.A.;
KORIDZE, Z.I.

Chromatographic separation of a mixture of hydrocarbon gases
C₁ - C₄ on X-type zeolites with a different content of calcium
cations. Dokl. AN SSSR 156 no. 4:932-934 Je '64. (MIRA 17:6)

1. Institut khimii im. P.G.Melinishvili AN GruzSSR. 2. AN Gruz
SSR (for TSitsishvili).

ANAKONIKASHVILI, I. G.

Chromatographic analysis of saturated hydrocarbons C₇-C₁₇ on natural adsorbents. I. G. Anakonikashvili and I. P. Kur'mina. *Zhurnal Fizicheskoi Khimii* 1960, 34, 1000-1002.

Most effective adsorbents for the separation of saturated hydrocarbons in chromatographic analysis are those which require the high desorption temp. required by the best adsorbents; natrolite, tripoli, diatomite, and kaolin were tested for this purpose. The app. used is illustrated, and the gases desorbed with N were analyzed by heat-coul. measurements. The normal C₇-C₁₇ hydrocarbons were relatively cleanly and completely sepd., the isobologs were not so well sepd., except for *n*-C₁₁H₂₄ and iso-C₁₁H₂₄ and the C₁₁H₂₄ homologs which were sharply sepd. on diatomite.

W. M. Sternberg

EM

ANDRONIKASHVILI, T. G. Cand Chem Sci --(diss) " The adsorbitive ^{separation} ~~division~~ of
saturated hydrocarbons in the normal structure C₅-C₇." Mos 1957. 9 pp 20 cm.
(Acad Sci USSR. Inst of Petroleum), 100 copies
(KL, 7-57, 104)

9

ANDRONIKASHVILI, T.G.

65-10-11/13

AUTHORS: Sokolov, V.A., Andronikashvili, T.G., Kuz'mina, L.P. and Shishkova, V.P.

TITLE: The Use of Some Minerals of Various Adsorption Capacity for Chromatographic Analysis of Gases (Primeneniye nekotorykh mineralov razlichnoy adsorbtsionnoy emkosti dlya khromatograficheskogo analiza gazov)

PERIODICAL: Khimiya i Tekhnologiya Topliva i Masel, 1957, No.10, pp. 61-65 (USSR).

ABSTRACT: A comparison of structural characteristics and other properties of adsorbents and their separating ability of hydrocarbons and other gases was carried out. The types of adsorbents and their physical properties are given in Table 1, adsorption isotherms (for benzole) in Fig.1. The possibility of application of the above adsorbents (serpentine, natrolite, kaolinite, diatomite, etc.) for chromatographic separation of hydrocarbons (C₁-C₇), carbon monoxide and hydrogen was investigated. The diagram of one of the apparatus used is shown in Fig.2. The detection was based either on heat conductivity (Ref.10) or using a special absorber with a 40% solution of KOH, when carbon dioxide was used as a developing gas. Examples of curves representing the separation of mixtures are given in Fig.3. Chemical composition of natural adsorbents tested is given in Table 2. On the basis of the results obtained, it is

Card1/2

Handwritten: ~~Handwritten text~~
SOKOLOV, V.A.; ANIRONIKASHVILI, T.G.

Adsorption technique for separation of C₅ - C₇ saturated hydrocarbons. Trudy inst. nefi. 10:101-105 '57. (MIRA 11:4)
(Hydrocarbons) (Gases--Absorption and adsorption)

ANDRONIKASHVILI, T.G.

Effect of certain factors on chromatographic separation of a mixture of saturated hydrocarbons (fractions G₅ - G₇). Soob. AN Gruz. SSR 19 no.3:273-278 S '57. (MIRA 11:5)

1. Akademiya nauk Gruzinskoy SSR, Institut khimii im. P.G. Melikishvili, Tbilisi. Predstavleno chlenom-korrespondentom Akademii G.V. TSitsishvili.
(Chromatographic analysis) (Hydrocarbons)

TSITSISHVILI, G.V., akademik; ANDRONIKASHVILI, T.G.; LAPERASHVILI, L.Ya.;
GEDZHADZE, TS.A.

Synthesis of some forms of molecular sieves. Soob. AN Gruz. SSR
27 no.4:405-410 0 '61. (MIRA 15:1)

1. AN Gruzinskoy SSR, Institut khimii imeni P.G. Melikishvili,
Tbilisi. Akademiya nauk Gruzinskoy SSR (for TSitsishvili).
(Zeolites)

PHASE I BOOK EXPLOITATION

128
SOV/6246

Soveshchaniye po tseolitam. 1st, Leningrad, 1961.

Sinteticheskiye tseolity; polucheniye, issledovaniye i primeneniye
(Synthetic Zeolites: Production, Investigation, and Use). Mos-
cow, Izd-vo AN SSSR, 1962. 286 p. (Series: Its: Doklady)
Errata slip inserted. 2500 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Otdeleniye khimicheskikh
nauk. Komisiya po tseolitam.

Resp. Eds.: M. M. Dubinin, Academician and V. V. Serpinskiy, Doctor
of Chemical Sciences; Ed.: Ye. G. Zhukovskaya; Tech. Ed.: S. P.
Golub'.

PURPOSE: This book is intended for scientists and engineers engaged
in the production of synthetic zeolites (molecular sieves), and
for chemists in general.

Card 1/18 24

Synthetic Zeolites: (Cont.)

SOV/6246

COVERAGE: The book is a collection of reports presented at the First Conference on Zeolites, held in Leningrad 16 through 19 March 1961 at the Leningrad Technological Institute imeni Lensovet, and is purportedly the first monograph on this subject. The reports are grouped into 3 subject areas: 1) theoretical problems of adsorption on various types of zeolites and methods for their investigation, 2) the production of zeolites, and 3) application of zeolites. No personalities are mentioned. References follow individual articles.

TABLE OF CONTENTS:

Foreword	3
Dubinina, M. M. Introduction	5

Card 2/114

Synthetic Zeolites: (Cont.)

SOV/6246

Andronikashvili, T. G., and Sh. D. Sabelashvili. Gas Adsorption Chromatography on Synthetic Zeolites	65
Zhdanov, S. P., L. S. Yastrebova, Ye. V. Koromel'di. Porous Glasses as Molecular Sieves	68
Dobychin, D. P., T. M. Burkat, N. N. Kiseleva. Porous Glasses as Absorbents of the Molecular Sieve Type	75
Dubinin, M. M. The Composition of Cubic Octahedral Structural Units of Synthetic Zeolites	86
Aleskovskiy, B. V. The Possibility of Obtaining Absorbents of the Molecular Sieve Type of Leaching	91
Mirskiy, Ya. V., and M. G. Mitrofanov. Adsorption of Hydrocarbon Vapors by Synthetic Zeolites at High Temperatures	94

Card ~~5/12~~ 34

S/C81/62/000/016/018/043
B168/B186

AUTHORS: Tsitsishvili, G. V., Andronikashvili, T. G.,
Laperashvili, L. Ya., Gedzhadze, Ts. A.

TITLE: Synthesis of certain forms of molecular sieves

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 16, 1962, 348, abstract
16K131 (Soobshch. AN GruzSSR, v. 28, no. 4, 1961,
405-410 [Russian])

TEXT: It was found that zeolites can be synthesized at atmospheric pressure and 100°C. A sodium form of type A zeolite was obtained. Sodium zeolitic aluminosilicates were prepared from sodium aluminate and sodium silicate. A specific quantity of sodium aluminate solution was added to a sodium silicate solution. This produced a whitish yellow gel which, after thorough mixing, was left to stand for 42 hours and then heated for a specific period, which resulted in the formation of zeolite crystals. The product of crystallization was washed and the further zeolite obtained was dried at 80-90°C. Calcium and copper forms of zeolite were obtained by ion exchange from the sodium form. [Abstracter's note: Complete translation.]
Card 1/1

ANDRONIKASHVILI, T.G.; SABELASHVILI, Sh.D.; TSITSISHVILI, G.V.

Gas chromatography study of the separation properties of sodium and silver forms of X-type molecular sieves. Neftkimiia 2 no.2: 248-252 Mr-Apr '62. (MIRA 15:6)

1. Institut khimii AN Gruzinksoy SSR imeni P.G.Melikishvili.
(Gas chromatography) (Zeolites)

TSITSISHVILI, G.V., akademik; GRIGOLIYA, Ye.I.; ANDRONIKASHVILI, T.G.;
SHUAKRISHVILI, M.S.

Sorption of water vapor on molecular sieves. Soob. AN Gruz. SSR
28 no.1:17-24, Ja '62. (MIRA 15:4)

1. Akademiya Nauk Gruzinskoy SSR, Institut khimii imeni P.G.
Melikishvili, Tbilisi. 2. Akademiya Nauk Gruzinskoy SSR (for
TSitsishvili).

(Zeolites)

(Adsorption)

(Steam)

ANDRONIKASHVILI, T.G.; SABELASHVILI, Sh.D.; IVANOV, V.K.

Device for injecting samples into the KhT-2M chromathermograph.
Zav.lab. 28 no.5:631 '62. (MIRA 15:6)

1. Institut khimi AN Gruzinskoy SSR.
(Chromatographic analysis)

TSITSISHVILI, G.V., akademik; ANDRONIKASHVILI, T.G.

Manifestation of intermolecular forces in chromatographic separation. Soob. AN Gruz. SSR 33 no. 2:317-324 F '64.
(MIRA 17:9)

1. Institut khimii imeni Melikishvili AN GruzSSR.
2. Akademiya nauk Gruzinskoy SSR (for TSitsishvili).

TSITSISHVILI, G.V., akademik; ANDRONIKASHVILI, T.G.; SABELASHVILI, Sh.D.;
KORIDZE, Z.I.

Selective properties of silver ion-containing fillers for a
chromatographic column. Soob. AN Gruz. SSR 35 no.1:87-92 J1
'64. (MIRA 17:10)

1. Institut khimii imeni Melikishvili AN GruzSSR. 2. Akademiya
nauk Gruzinskoy SSR (for TSitsishvili).

TSITSISHVILI, G.V.; ANDRONIKASHVILI, T.G.; LAPERASHVILI, L.Ya.

Color indication of moisture with the aid of cation exchange types
of zeolites. Zav. lab. 30 no.9:1113-1115 '64. (MIRA 18:3)

1. Institut khimii AN Gruzinskoy SSR.

22098-01

ACCESSION NR: AP5000381

REF ID: A660014000/0285/0287

1965-11

AUTHOR: Tsitsishvili, G. V., Krupennikova, A. Ya., ~~Andronikashvili, T. G.~~, Ts. A., Andronikashvili, T. G.

TITLE: Crystallization characteristics of obsidian and tufaceous rhyolite

SOURCE: AN SSSR. Izvestiya. Neorganicheskiye materialy, v. 1, no. 2, 1965, 285-287

TOPIC TAGS: obsidian, rhyolite, crystallization

ABSTRACT: The use of minerals as raw material for the direct synthesis of sorbents is important in science and economy. It opens the possibility for synthesis of sorbents with predetermined properties. The fact that natural zeolites are formed by the hydrothermal reaction of different salt solutions with rocks makes it possible to expand the use of experimental methods for the production of synthetic zeolites and to reproduce the conditions of hydrothermal metamorphoses of amorphous volcanic glass into zeolites. It was shown that crystalline structures

Card 1/2

L 53698-65

ACCESSION NR: AP5009381

may be produced from amorphous obsidian and tufaceous rhyolite from deposits of the Georgian SSR. The minerals which were used in this work crystallized only in the form of sodalite when subjected to the treatment described by the Japanese authors [T. Sudo and M. Matsuka, Geokhim. et Kosmicheskaya Geol., 1 (1959)]. The formation of sodalite was most successful in highly concentrated sodium hydroxide solutions. Sodium chloride or molecular chlorine had no significant effect on the formation of sodalite. The addition of sodium silicate to the reaction mixture changed the crystallization process significantly preventing the formation of sodalite due to the formation of a new crystalline structure. Orig. art. has: 2 tables.

ASSOCIATION: Institut khimii im. P. G. Melikishvili Akademii nauk Gruz SSR
(Chemistry Institute, Academy of Sciences Georgian SSR)

SUBMITTED: 13Jul64

ENCL: 00

SUB CODE: IC

NO REF SOV: 000

OTHER: 003

DR
Card 2/2

TSITSISHVILI, G.V., akademik; ANDRONIKASHVILI, T.G.; CHUMBURIDZE, T.A.

Gas chromatographic properties of barium-containing type-X
zeolites. Soob. AN Gruz. SSR 38 no.1:63-68 Ap '65.
(MIRA 18:12)

1. Institut fizicheskoy i organicheskoy khimii imeni
Melikishvili, AN GruzSSR. 2. Akademiya nauk Gruzinskoy
SSR (for TSitsishvili). Submitted Dec. 11, 1964.

SIKHARULIDZE, N.G.; TSITSISHVILI, G.V.; ANDRONIKASHVILI, T.G.

Purification of air in oxygen shops by removing acetylene traces on zeolite adsorbents. Zhur. prikl. khim. 38 no.7:1536-1541 J1 '65. (MIRA 1877)

USSR / Forestry. Dendrology.

K

Abs Jour : Ref Zhur - Biologiya, No 18, 1953, No. 82185

Author : Andronikashvili, V. G.
Inst : Tiflis Botanical Garden, AS Georgian SSR
Title : Some New Data on Types and Fruiting of the Iberian Oak

Orig Pub : Vestn. Tbilissk. botani. sada. AN GruzSSR, 1957, No 64,
55-61

Abstract : *Quercus iberica*, endemic to the Caucasus, is found in significant numbers on the lower part of the mountain slopes (500 - 1300 - 1400 m above sea level). Because of differences in cultivation conditions in this species considerable type variation is observed. Isolated as independent strains and being essentially types of *Q. iberica*, *Q. sorocarpa* Woron. and *Q. macrocarpa* (D. Sosn.) A. Grossh. grew together with the former in the riverside plantings of Borzhomskiy Rayon (Akhaldaba). *Q. iberica* v.

Card 1,2

ANDRONIKASHVILI, Z. L.

USSR/Chemistry - Liquid helium

Card : 1/1

Authors : Andronikashvili, Z. L., Prof. memb. Corresp. of Gruz-SSR

Title : Liquid helium

Periodical : Priroda, 6, 13 - 23, June 1954

Abstract : The physical properties of liquid helium are described and the difference between liquid helium and other liquids is explained. The viscosity measurements carried out by various scientists on a normal component of helium II are analyzed as to their accuracy. Data of various authors are presented on the heat conductivity, or rather the difference in heat conductivity, of helium I and II, the heat conductivity of the latter exceeds that of one of the best heat conductors, i.e. copper. Liquid helium dissolves no other substances, and only its own isotopes (helium isotopes) are capable of forming unique $\text{He}^4 - \text{He}^3$ and $\text{He}^4 - \text{He}^6$ solutions. Graphs.

Institution :

Submitted :

ANDRONIKOV, D.A. 25

04

PROCESSES AND PROPERTIES

The effect of the composition of the water on the whiteness of materials when bleached. D. A. Andronikov and G. P. Trykova. *L'no-pen'ho-dshutovaya Prom.* 6, No. 4, 35-6(1936); *Chem. Zvest.* 1938, 1, 774.—The use of river water instead of distd. water in the bleaching of linen with hypochlorite can either improve or impair the bleaching action. The different action depends upon the Fe content of the water. M. G. Moore

ASS. S. I. A. METALLURGICAL LITERATURE CLASSIFICATION

SECTION NUMBER

SECTION NUMBER

ANDRONIKOV, D. A. 25

CA

The production of an impregnating agent from the clay. "Mufa." D. A. Andronikov and O. A. Samsonova. *L'no-pen'no-dokladye Prom.* 6, No. 4, 31-5(1930); *Chem. Zentr.* 1930, I, 1035. --The use of an Al product for waterproofing of fabrics is reported. It contains Al_2O_3 6.7-10.58, Fe_2O_3 0.16-0.3 and insol. residue 18.8-20.9% and gives no clear soles. More satisfactory results can be obtained when the product is used in combination with cottonseed oil soap. The addn. of 2 g. soap per l. of soln. conig. 240 g. Al_2O_3 is sufficient. The soap soln. is added at 40°.

W. A. Moore

ASSOCIATED METALLURGICAL LITERATURE CLASSIFICATION

ANDRONIKOV, Gyorgy, kutato

Experiences with rock drilling heads manufactures in Hungary.
Bany lap 94 no.3:205-206 Mr '61.

1. Kemenyfeipari Vallalat, Budapest.

(Hungary—Rock drills)

ANDRONIKOV, Irakliy

Thoughts on collectors. Nauka i zhizn' 28 no.7:47-48 J1 '61.
(MIRA 14:8)

(Collectors and collecting)

ANDRONIKOV, Irakliy

Treasures of the Central State Archives of Literature and Art.
Nauka i shisn' 29 no.12:56-63 D '62. (MIRA 16:3)
(Moscow—Archives)

ANDRONIKOV, Lev Nikolayevich; BOGOLYUBOV, N.D., redaktor; NAUMOV, K.M.,
tekhnicheskii redaktor.

[Worker's movement in Italy from 1918-1939] Rabochee dvizhenie
v Italii v 1918-1939 godakh. Moskva, Vysshaya partiinaya shkola
pri TsK KPSS, 1957. 58 p. (MLRA 10:6)
(Italy--Labor and laboring classes)

ANDRONIKOV, Nikolay Grigor'yevich, kand.voyennykh nauk, dots., polkovnik;
BEGISHEV, Aleksandr Semenovich, kand.voyennykh nauk, dots.,
polkovnik; KALACHEV, Ivan Georgiyevich, kand.voyennykh nauk, dots.,
polkovnik; KRASNOV, Izrail' Isayevich, kand.voyennykh nauk, dots.,
polkovnik; TEREKHOV, Petr Vasil'yevich, kand.voyennykh nauk, dots.,
polkovnik; ZYUZIN, H.M., polkovnik, red.; SOROKIN, V.V., tekhn.
red.

[Armored and mechanized forces of the Soviet Army; a brief account of their development and battle experiences] Bronetankovye i mekhanizirovannye voiska Sovetskoi Armii; kratkii ocherk razvitiia i boevogo puti. Moskva, Voen. izd-vo M-va obor. SSSR, 1958. 263 p. (MIRA 11:5)
(Russia--Army)

KOZLOV, V.N.; KOROLEVA, N.I.; KRYMSKIY, G.P. [deceased]; ANDRONIKOV, N.V.

Production of butyl acetate from acetic acid made from wood
powder. Sbor.rab.Lab.lesokhim. no.2:65-69 '58. (MIRA 12:8)
(Acetic acid) (Butyl alcohol) (Calcium acetate)

ANDRONIKOV, V.A.

Improving research techniques in making soil maps [with summary
in English]. Pochvovedenie no.8:117-124 Ag '58. (MIRA 11:9)

1. Pochvennyy institut im. V.V. Dokuchayeva AN SSSR.
(Soils--Mars)

ANDRONIKOV, V. B.

"Heat resistance of sexual cells of poikilothermic animals."

UNESCO - International Symposium on the Role of Cell Reactions in Adaptations
of Metazoa to Environmental Temperature.

Leningrad, USSR, 31 May - 5 June 1963

ANDRONIKOV, V.B.

Thermostability of germ cells and embryos in cold-blooded
animals. Sbor.rab. Inst. tsit. no.8:125-139 '65. (MIRA 18:12)

1. Laboratoriya sravnitel'noy tsitologii Instituta tsitologii
AN SSSR, Leningrad.

~~ANDRONIKOV, V.I.~~

Using color photography in soil research. Pochvovedenie no.9:92-94
§ '56. (MLRA 10:1)

1. Pochvennyy insitut imeni V.V.Dokuchayeva Akademii nauk SSSR.
(Color photography) (Soil research)

Country : USSR J
Category : Soil Science. Soil Genesis and Geography.
Abs. Jour. : 53347
Author : ~~Andronikov, V. L.~~
Institut. : Soil Institute of the A.S. USSR
Title : Methods of Interpreting the Soil Cover of the
Forest Steppe from Aerial Photographic Data
Orig. Pub. : Pochvovedeniye, 1957, No.5, 70-76
Abstract : Certain results are reported in the work of the
Soil Institute of the Academy of Sciences USSR
to clear up the basic distinctions and methods of
interpreting the soil cover from aerial survey
data, using one of the typical sections of the
forest steppe area in Ryazanskaya Oblast as an
example. The results obtained by interpreting
the soil cover from spectrozonal aerial photos
were superior to black and white photos in the
clarity of soil demarcation by mechanical
Card: 1/2

ANDRONIKOV, V. L.: Master Geolog-Mineralo Sci (diss) -- "Methods of decipher-
ing the soil cover of the forest-steppe from aerial photographs". Moscow, 1958.
17 pp (Acad Sci USSR, Soil Inst im V. V. Dokuchayev), 150 copies (KL, No 4, 1959,
123)

AUTHOR: Andronikov, V.L. 10-58-3-15/29

TITLE: On the Spectrum Reflection Ability of Forest-Steppe Soils
(O spektral'noy otrazhatel'noy sposobnosti nekotorykh pochv lesostepi)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Seriya Geograficheskaya, 1958, Nr. 3, pp 93-97 (USSR)

ABSTRACT: When taking aerial photographs of ground cover, the question of wide use of spectrozonal serial survey becomes very important, since it helps to increase the effectiveness of soil analysis. The spectrum reflection abilities of various objects in nature were investigated by G.A. Tikhov, Ye.L. Krinov, A.K. Pronin and others. The present article deals with the investigation of the spectrum reflection ability of some wood-steppe soils to discover the spectrophotometric characteristics of individual soils. Specimens of soil were studied with the aid of the universal photometer "FM". Analyses of the material were made. As a result, it was found that spectrum reflection depends on the composition of soil. The article contains 3 graphs, 2 tables and 5 references, 3 of which are Soviet, and 2 English.

Card 1/2

On the Spectrum Reflection Ability of Forest-Steppe Soils

10-58-3-15/29

ASSOCIATION: Pochvennyy institut imeni V.V. Dokuchayeva (Soil Institute
imeni V.V. Dokuchayev)

AVAILABLE: Library of Congress

Card 2/2

1. Soils - Spectrum
2. Soils - Analysis

ANDRONIKOV, V.L.

Principles of photointerpretation in aerial surveying of
eroded forest-steppe soils. Pochvovedenie no.10:109-116
0 '59. (MIRA 13:2)

1. Pochvennyy institut im.V.V.Dokuchayeva AN SSSR.
(Erosion) (Photography, Aerial)

ANDRONIKOV, V.L.; MIKHNOVSKIY, V.K.

Using large-scale soil maps in agriculture. Pochvovedenie
no.12:24-35 D '59. (MIRA 13:4)

1. Pochvennyy institut im. V.V.Dokuchayeva Akademii nauk
SSSR.

(Soils--Maps)

ANDRONEKOV, V.I.

Population, food and the earth. *Prirada* 31 no. 1:4-13 Apr '61.
(MIRA 12:5)

I. Pochvennyy Institut im. V.I. Dokuchayeva, Moskva.

История, 7. 1

Category : USSR/General Problems - Problems of Teaching

A-3

Abs Jour : Ref Zhur - Fizika, No 2, 1957, No 2811

Author : Andronikov, V.V.

Title : Instruments for the Production of Slowly-Variable Currents and Certain Demonstrations with Them.

Orig Pub : Uch. zap. Leningr. gos. ped. in-ta, 1955, 103, 261-293

Abstract : Description of one- two- and three-phase inverters, which produce alternating current of any desired low frequency, and of a series of demonstrations that can be performed with these inverters. The instruments can be made without the help of a skilled mechanic and are successfully applied when covering the corresponding parts of the curriculum both in middle and in higher schools.

Card : 1/1

~~ANDRONIKOV, V. V.~~

Characteristic errors in representing magnetic fields made
by some authors of physics textbooks. Uch. zap. Ped. inst.
Gerts. 125:85-93 '56. (MLRA 9:12)

(Magnetic fields)

ALEKSANDROV, N.V., dots.; ANDRONIKOV, V.V., dots.; MAKSAYEV, A.V., tekhn.
red.

[Programs of pedagogical institutes; electric engineering] Programmy
pedagogicheskikh institutov; elektrotehnika. [Moskva] Uchpedgis,
1957. 6 p. (MIRA 11:9)

1. Russia (1917- R.S.F.S.R.) Glavnoye upravleniye vysshikh i
srednikh pedagogicheskikh uchebnykh zavedeniy.
(Electric engineering--Study and teaching)

ANDRONIKOV, E. F.

USSR/Engineering - Tools

Card 1/1 Pub. 103 - 10/29

Authors : Andronikov, E. F.

Title : Drawless clamping head (chuck)

Periodical : Stan. i instr. 10, 23-24, Oct 1954

Abstract : ✓ A new type drawless clamping chuck devised by F. P. Soskov, for automatic screw lathes is described, and drawings are given depicting the above mentioned chuck and the disposition of its components.

Institution : ...

Submitted : ...

ANDRONIKOVA, Ye.L.; SLOBODSKAYA, E.D.

A list of M.A. Rykachev's works. Trudy GGO no.123:11-27
'61. (MIRA 14:8)

(Bibliography—Meteorology)

(Bibliography—Magnetism, Terrestrial)

(Rykachev, M.A.)

ANDERSON, R. S. ; ISLTON, R. L.

Photo objects.

An article found in "Optics for Military Use", Part I, published by the USSR Academ. of Science, Moscow, 1945.

ANDRONNIKOV, K.S.; BALAKOV, V.V.; BUZHINSKIY, A.N.; BURAGO, A.N.; VEITMAN, L.A.; VISHNEVSKIY, A.A.; VOLOSOV, D.S.; GASSOVSKIY, L.N., professor; GERSHUN, A.A., professor; YEL'YASHEVICH, M.A.; YEVSTROP'YEV, K.S.; GUREVICH, M.M., professor; KOLYADIN, A.I.; KORYAKIN, B.M.; KURITSKIY, A.L.; PAPIYANTS, K.A.; PROKOP'YEV, V.K., professor; PUTSNIKO, Ye.K.; REZUNOV, M.A.; RITYN', N.B., SAVOST'YANOVA, M.V., professor; SEVCHENKO, A.N.; SENNOV, N.I.; STOZHAROV, A.I.; FAYERMAN, G.P., professor; PROFILOV, P.P.; TSAREVSKIY, Ye.N., professor; CHEKHMATAYEV, D.P.; YUDIN, Ye.F.; KAVRAYSKIY, V.V., professor; VAVILOV, S.I., akademik, redaktor

[Optics in military science] Optika v voennom dele; sbornik statei. Pod red. S.I.Vavilova i M.V.Savost'ianovoi. Izd. 3-ya, zanovo perer. i dop. Moskva. Vol.2. 1948. 387 p. (MLRA 9:9)

1. Akademiya nauk SSSR. 2. Sostaviteli - sotrudniki Gosudarstvennogo Opticheskogo instituta (for all except Vavilov and Kavrayskiy)
3. Voenno-morskaya akademiya (for Kavrayskiy)
(Optics)

ANDRONNIKOV, N.I.

Some features of positive and inhibitory cardiac conditioned
reflexes in man. Zhur. vys. nerv. deiat. 10 no. 5:654-662
S-0 '60. (MIRA 13:12)

1. Institut evolyutsionnoy fiziologii im. I.M. Sechenova Akademii
nauk SSSR.

(CONDITIONED RESPONSE) (HEART)

ANDRONNIKOV, N.K.; TSEPIN, M.F.

Created by the innovators of the Rostov Agricultural Machinery Plant.
Mashinostroitel' no.4;14-15 Ap '65. (MIRA 18:5)

KOZLOV, V.N.; ANDRONNIKOV, N.V.; MYSHKIN, M.G. [deceased]

Investigation of the continuous charcoal kiln developed by V.N.
Kozlov. Trudy Inst.khimi met. no.2:128-149 '55. (MLRA 9:5)
(Kilns) (Distillation, Destructive)

АНДРОНИКОВ, Н. В.

Andronnikov, N. V.

"Investigation of the process of obtaining complex ethers from powdered pyrolic acid with the simultaneous reactions of double decomposition and etherification in a single apparatus." Min Higher Education USSR. Ural Foetry Engineering Inst. Sverdlovsk, 1956. (Dissertation for the Degree of Candidate in Technical Sciences).

SO: Knizhnaya letopis'
No. 25, 1956. Moscow

ANDRONNIKOV, V.

Conference of practicing physicians. Zhur.mikrobiol.epid,i immun.
32 no.1:156 Ja '61. (MIRA 14:6)

(MEDICINE--CONGRESSES)

TIMOFEYEV, M.K.; ANDRONNIKOV, V.A.

Retrospective study of the population for tularemia by means of the
tularemia test. Zhur.mikrobiol.epid.i immun. 33 no.5:120-121 My '62.
(MIRA 15:8)

1. Iz Vsesoyuznogo nauchno-issledovatel'skogo instituta "Mikrob"
i sanitarno-epidemiologicheskoy stantsii Chuvashskoy ASSR.
(TULAREMIA) (CHUVASHIA--MEDICAL SCREENING)

L 58869-65 EWA(b)-2/EWA(j)/EWT(1)/T JK

ACCESSION NR: AP5011272

UR/0016/65/000/004/0021/0025

Author: Meloyev, S. P.; Andronnikov, V. A.; Kozlov, I. L.;
Kozlov, S. V.; Kozlov, S. V.; Kozlov, S. V.; Kozlov, S. V.

Title: Experience in detecting tularemia natural foci in Chuvash ASSR

SOURCE: Zhurnal mikrobiologii, epidemiologii i immunobiologii, no. 4, 1961, 21-25

TOPIC TAGS: tularemia, epidemiology, Chuvash ASSR, natural focus, serologic test, rodent, tick

ABSTRACT: In 1961 investigations were conducted to find natural foci of tularemia in Chuvash ASSR, a part of a large area where tularemia is practically unknown. Three methods of investigation were used: 1) seropositive examination of the population by tularemia skin allergy tests; 2) bacteriological investigation of ticks and rodents; 3) bacteriological investigation of ticks and rodents. Individuals were found with positive reactions to tularin were found, and most of these lived in areas

Cont 1/2

1 0000-00

ACCESSION NR: AP5011272

2

located in the Prisura forests. Also, a new case of tularemia was disclosed. The most varied species of mammals and ixodic ticks capable of supporting tularemia foci were found in the southwestern part of the republic in the Prisura forests and the Sura river delta. The tularemia foci of Chuvash ASSR are of a latent nature due to the absence of any sharp signs of the carrier of tetrads and relatively few water rats. However, an increase in the number of muskrats for commercial purposes may contribute to more active animal foci. Orig. art. has: None.

ASSOCIATION: Institut epidemiologii i mikrobiologii Im. N. P. Gameli AMN SSSR (Epidemiology and Microbiology Institute AMN SSSR); Respublikan-skaya sanitarnoepticheskaya logicheskaya stantsiya Chuvashskaya ASSR (Republican Sanitary-Epidemiological and Logical Station of Chuvash ASSR)

SUBMITTED: 25Nov63

ENCL: 00

SUB CODE: LS

NR REP SOV: 004

OTHER: 000

Card 2/2^{1/4}

ANDRONNIKOV, V.V. (g. Leningard)

Reorganization of electric laboratories at pedagogical institutes.
Politakh.obuch. no.10:67-69 0 '58_A (MIRA 11:11)
(Electric laboratories)

MEL'TSER, Ye.M., kand.filologicheskikh nauk; ELIASHBERG, A.Ya., starshiy
prepodavatel'; ANDRONNIKOVA, Ye.M., prepodavatel'

Analyzing the terminology of the pulp and paper industry; from
English and German sources. Trudy LTITSBP no.8:200-208 '61.
(MIRA 16:9)

(Paper industry--Terminology)

ANDRONNIKOVA, Ye.M., referent

Weighing 1 square meter of a moving paper sheet with the aid
of beta rays (from "Wochenblatt für Papierfabrikation," no.13,
1954) Bum.prom.32 no.9:27-29 S '57. (MIRA 10:12)
(Paper) (Beta rays--Industrial applications)

MEL'TSER, Yevgeniya Mikhailovna, kand.filol.nauk; ANDRONNIKOVA, Yelena Mikhailovna; KNYAZYATOVA, Lyudmila Ivanovna; GRABOVSKIY-ZKONOPNITS, V.A., kand.tekhn.nauk, red.; POGREBNAYA, L.L., red.; MURASHOVA, N.Ya., tekhn.red.

[German-Russian dictionary of the paper industry] Nemetsko-russkii slovar' po tselliulozno-bumazhnomu proizvodstvu. Sostavili: E.M. Mel'tser, E.M.Andronnikova i L.I.Kniaziatova. Red. V.A.Grabovskii-Zkonopnits. Moskva, Gos.izd-vo fiziko-matem.lit-ry, 1959. 235 p. (MIRA 12:4)

(German language--Dictionaries--Russian)
(Paper industry--Dictionaries)

ANDRONOV, A.

New models of Soviet automobiles with small cylinder capacity. Avt.
transp. 42 no.9:38-40 S '64. (MIR: 17:11)

1. Glavnyy konstruktor Moskovskogo zavoda malolitrzhnykh avtomobiley.

06511

SOV/141-58-1-1/14

AUTHORS: Andronov, A.A. and Gorelik, G. S. (Deceased)

TITLE: Radiophysics and the General Theory of Machines

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Radiofizika, 1958, Nr 1, pp 5-13 (USSR)

ABSTRACT: (Note: The paper was written in 1944 and forms the introduction to an unfinished monograph on oscillators, automatic control and the general dynamics of machines. In writing the introduction, the authors were advised by L. I. Mandel'shtam, who took a lively interest in the monograph. This paper is published in the journal for the first time). The theory of oscillations in nonconservative systems has been known for quite a long time but only the comparatively recent interest in radiophysics and radio engineering has stimulated its rapid and fruitful development. The problems encountered in the investigation of the oscillations in nonconservative systems are quite different from those which can be dealt with by means of the classic mechanics of Lagrange and Hamilton. Consequently, the development of the theory of oscillations was concerned not only with the solution of concrete problems but aimed at the establishment of adequate mathematical methods which would permit the successful tackling of various problems. Barkhausen first investigated the problem of oscillations in

Card 1/4

06511
SOV/141-58-1-1/14

Radiophysics and the General Theory of Machines

oscillations of any shape by means of the quantitative theory of the differential equations of Poincaré; (3) the study of the stability of oscillating systems by employing the works of Lyapunov. The use of the above mathematical equipment permitted the investigation not only of electrical oscillations but could be applied to the investigation of the oscillations caused by hard friction (e.g. during the cutting of metals), the study of the oscillations of distributed systems and the investigation of the problems of aerodynamics. The mathematical equipment could also be used in the study of the problems of automatic control. In this way a new science was created which embraced both the oscillations and the automatic machine control systems. The science could be termed "the general dynamics of machines". Historically, the theory of automatic control has had two development trends. One of these follows the path first adopted by I. A. Vyshnegradskiy, who published his classical work "On the direct action controllers" in 1876. In this the author solved the linearized problem of control by neglecting the friction. The second trend in the theory of control is due to Leauté, whose work dealt with the investigation of the non-linear problems which took into account the Coulomb friction. Later on, Stodola

Card 3/4

06511
SOV/141-58-1-1/14

Radiophysics and the General Theory of Machines

(1892) introduced the Routh-Hurwitz stability criterion. In recent years, Nyquist proposed a novel method of investigating the stability by plotting the frequency response of the investigated systems. Since then a number of important works dealing with the oscillations in automatic control systems have been undertaken in the Soviet Union. In particular, the works of Nikol'skiy, Butenin, Kotel'nikov and Bulgakov are of great importance. The paper contains 8 references, 3 of which are French and 5 Soviet.

ASSOCIATION: Issledovatel'skiy fiziko-tehnicheskiy institut pri Gor'kovskom universitete (Physics-Engineering Research Institute of the Gor'kiy University)

SUBMITTED: December 20, 1957.

Card 4/4

85983

S/141/60/003/004/008/019
E032/E314

6.8000 (3201,1099,1162)

AUTHOR: Andronov, A.A.TITLE: On the Natural Rotation of the Plane of Polarisation
of SoundPERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy,
Radiofizika, 1960, Vol. 3, No. 4, pp.645 - 649

TEXT: In electrodynamics, effects associated with spatial dispersion are well-known and are frequently small. However, even in that case spatial dispersion must be taken into account since it leads to qualitatively new phenomena (Refs. 1, 2). Spatial dispersion may be of interest in the propagation of sound, in hydrodynamics, and in the theory of elasticity. In the present paper spatial dispersion is taken into account in the propagation of sound in a solid. The discussion is limited to the rotation of the plane of polarisation of sound. The relation between stress tensor σ_{ik} and the deformation tensor u_{ik} is written down in the form:

$$\sigma_{ik} = \lambda_{iklm} u_{lm} + \gamma_{iklmn} \frac{\partial u_{lm}}{\partial x_n} \quad (1)$$

in which second-order terms in a/L are neglected (a denotes Card 1/4

85983

S/141/60/003/004/008/019

E032/E314

On the Natural Rotation of the Plane of Polarisation of Sound
 the atomic dimensions and L is a typical linear dimension over
 which appreciable changes take place in the deformation and
 certain other quantities). In the above equation $\lambda_{ik}^{(m)}$ is
 the tensor representing elastic moduli and $\gamma_{ik}^{(mn)}$ is a tensor
 characterising the spatial dispersion (Einstein's summation
 notation is employed). The tensor $\gamma_{ik}^{(mn)}$ satisfies the
 conditions of Eqs. (2)-(4), where ρ is the density and c
 the velocity of sound. For plane waves in an isotropic body
 the usual equations of the theory of elasticity (Eq. 5) lead
 to the relations given by Eqs. (6), where u_i are the
 displacement components, $k = k_z$ and c_t and c_ℓ are the
 velocities of the transverse and longitudinal waves, respec-
 tively. In the expression for the deformation tensor, non-
 linear terms are neglected. As can be seen from Eqs. (6) the
 propagation of longitudinal waves is independent of γ ,
 while transverse normal waves are

Card 2/4

85983

S/141/60/003/004/008/019

E032/E314

On the Natural Rotation of the Plane of Polarisation of Sound circularly polarised and phase velocities with left (-) and right (+) polarisations are given by Eq. (7). The associated rotation of the plane of polarisation of a linearly polarised wave per unit path is then given by Eq. (8). Bearing in mind Eq. (2), Eq. (8) can also be written in the form of Eq. (8a). At sufficiently high frequencies the rotation of the plane of polarisation of some waves becomes large, for example, for $\omega \sim 10^8$ cps, $\phi \sim 10^{-1} \text{ cm}^{-1}$, i.e. the effect is already appreciable. However, observation of the rotation of the plane of polarisation is made difficult by absorption. In fact, for $\omega \sim 10^6$ cps the absorption coefficient is of the order of $10^{-3} - 10^{-5} \text{ cm}^{-1}$ and $\phi \sim 10^{-5} \text{ cm}^{-1}$. Thus, the absorption of the wave takes place much faster than the rotation of the plane of polarisation. In optics, when the absorption is appreciable, one observes circular dichroism. The analogous phenomenon takes place in the propagation of sound. The ratio of axes of the polarisation ellipse for a wave which has traversed a path l and was originally

Card 3/4

85983

S/141/60/003/004/008/019

E032/E314

On the Natural Rotation of the Plane of Polarisation of Sound

linearly polarised is given by Eq. (9). This ratio is extremely small since even for $\omega \sim 10^9$ cps the ratio is of the order of 10^{-4} cm, while the absorption coefficient is $1 - 10 \text{ cm}^{-1}$. The rotation of the plane of polarisation φ can be artificially increased by using special media. This can be achieved, for example, by introducing a large number of particles having no centre of symmetry and whose elastic moduli are different from those of the main medium. The paper is concluded with the application of the above ideas to naturally active crystals, in which the relation between stresses and strains is non-local. Acknowledgments are expressed to V.L. Ginzburg, who suggested this subject and directed the investigation. There are 10 references: 9 Soviet and 1 English.

ASSOCIATION: Gor'kovskiy gosudarstvennyy universitet
(Gor'kiy State University)

SUBMITTED: February 28, 1960

Card 4/4

33202

S/141/61/004/005/004/021
E120/E135

9,9845

AUTHOR: Andronov, A.A.TITLE: On the question of growth and attenuation of
plasma wavesPERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy,
Radiofizika, v.4, no.5, 1961, 861-866.

TEXT: The relation between the mechanism of Landau
attenuation of plasma waves (growth) and the Vavilov-Cherenkov
effects is followed up, and the coefficient of attenuation
(growth) is obtained. The attenuation coefficient of waves in
equilibrium plasma is obtained by applying Einstein's method of
Quantum Theory, splitting the damping coefficient into true
damping and induced emission and taking the velocity distribution
of the electron to be the Boltzman distribution. The
coefficient of absorption μ is taken to be:

$$\mu = \eta_{\omega}^s (\ominus) \frac{8\pi^3 c}{\omega^2 n} \frac{c/n - v_s \cos \Theta}{\kappa T_s} \quad (2)$$

Card 1/3

33202

S/141/61/004/005/004/021
E120/E135

On the question of growth and ...

where η_{ω}^s = radiating power of electron beam; Θ = angle between direction of propagation of the wave and the beam velocity;

ω = frequency; c = velocity of light; n = refractive index of light; T_s = temperature of beam; v_s = velocity of beam; k = Boltzmann's constant.

The radiating power of the electrons is obtained by considering the Cherenkov radiation of longitudinal waves caused by high energy particles. The Coulomb gauge is used in which the scalar potential satisfies Poisson's equation with a dielectric permeability which is a function of the frequency and the wave vector. By assuming that the radiating electron moves with uniform velocity the stopping force acting on it produced by the rest of the field is calculated. It turns out that in contrast to the case of transverse radiation the intensity of Cherenkov radiation of longitudinal waves does not vanish when the frequency of the wave equals that of the electron. The damping (growth) coefficient is then calculated. The results of Landau are obtained as a special case.

Card 2/3

33202

On the question of growth and ... S/141/61/004/005/004/021
E120/E135

Acknowledgments are expressed to V.V. Zheleznyakov for directing the work.

There are 11 references (9 Soviet-bloc and 2 non-Soviet-bloc.

The English language references read as follows:

Ref.3: D. Bohm, E.P. Gross, Phys.Rev., v.75, 1851 (1949).

Ref.4: D. Bohm, D. Pines, Phys.Rev., v.05, 338 (1952).

ASSOCIATION: Nauchno-issledovatel'skiy radiofizicheskiy institut
pri Gor'kovskom universitete
(Scientific Research Institute on Radiophysics at
Gor'kiy University)

SUBMITTED: February 6, 1961

+

Card 3/3

S/141/62/005/002/004/025
E032/E314

9.9000

AUTHORS: Andronov, A.A. and Gorodinskiy, G.V.

TITLE: Dipole radiation of longitudinal waves

PERIODICAL: Izvestiya vysshikh uchebnykh zavedoniy,
Radiofizika, v. 5, no. 2, 1962, 234 - 239

TEXT: The authors discuss the emission of longitudinal waves in an isotropic transparent medium with spatial dispersion. It is assumed that the relation between the induction \underline{D} and the electric field \underline{E} for processes which have a simple harmonic dependence on time is of the form

$$\underline{D} = \epsilon_0(\omega)\underline{E} + L_1^2 \nabla \operatorname{div} \underline{E} + L_2^2 \Delta \underline{E} \quad (1)$$

where $\epsilon_0(\omega)$ is the dielectric constant in the absence of spatial dispersion, and L_1 and L_2 are parameters whose absolute magnitudes are of the order of the characteristic microdimensions of the medium.

Card 1/4

Dipole radiation

S/141/62/005/002/004/025
E032/E314

Using the Coulomb calibration of the electromagnetic-field potentials, it turns out that the longitudinal field can be derived from a scalar potential φ , which satisfies the generalized Poisson equation

$$\hat{\epsilon}(\omega, \underline{k}) \Delta \varphi = -4\pi q \quad (2a)$$

where

$$\hat{\epsilon}(\omega, \underline{k}) = \hat{\epsilon}_0(\omega) - L \underline{k}^2 \quad (3)$$

is the dielectric-constant operator. The corresponding Green function is then derived and is shown to be

$$G(\underline{r}) = \frac{1 - e^{-ik_0 r}}{\epsilon_0(\omega)r} \quad (9)$$

Card 2/4

S/141/62/005/002/004/025
E032/E514

Dipole radiation

where $k_0^2 = \epsilon_0(\omega)/L^2$ and $L^2 = L_1^2 + L_2^2$. Next, it is shown that the total intensity of longitudinal waves in plasma is given by

$$P = \frac{p_0^2 \omega^4 \sqrt{\epsilon_0(\omega)}}{18 \sqrt{3} c^3 (v_T/c)^5} \quad (19a)$$

4

where v_T is the average thermal velocity of the electrons, and the dipole moment is

$$p(\underline{r}) = p_0 \delta(\underline{r}) e^{i\omega t} \quad (14)$$

Finally, the ratio of the intensity of longitudinal- to transverse waves is

Card 5/4

Dipole radiation

S/141/62/005/002/004/025
EO32/E314

$$\frac{P}{P_{\perp}} = \frac{1}{20(V_T/c)^3} \quad (20a)$$

4

Thus, the intensity of the longitudinal waves is much higher than that of the transverse waves and tends to infinity at a fixed frequency and fixed dipole moment, when L or V_T tend to zero.

ASSOCIATION: Nauchno-issledovatel'skiy radiofizicheskiy institut pri Gor'kovskom universitete
(Scientific Research Radiophysics Institute of Gor'kiy University)

SUBMITTED: July 26, 1961

Card 4/4

ANDRONOV, A.A.; TRAKHTENGERTS, V. Yu.

Instability of one-dimensional packets and the absorption
of electromagnetic waves in a plasma. Zhur. eksp. i teor.
fiz. 45 no.4:1009-1015 0 '63. (MIRA 16:11)

1. Radio-fizicheskiy institut Gor'kovskogo gosudarstvennogo
universiteta.

ACCESSION NR: APL031626

S/0203/64/004/002/0233/0242

AUTHORS: Andronov, A. A.; Trakhtengerts, V. Yu.

TITLE: The kinetic instability of the outer radiation belt of the earth

SOURCE: Geomagnetizm i aeronomiya, v. 4, no. 2, 1964, 233-242

TOPIC TAGS: radiation belt, aurora, corpuscular stream, ultralow frequency, quasiequilibrium state

ABSTRACT: The authors have used quasilinear equations to construct a nonlinear theory of instability of the earth's outer radiation belt. They have determined the values and time dependence of particle streams (electrons) leaving the belt, and they have computed the intensity of ultralow-frequency noise. Although complete loss of particles from the belt because of the indicated instability is very small (about 1-10% of the total number of particles), the differential loss at any definite energy level may be considerable. Loss of particles from zones corresponding to electron energies of 10-25 kev may amount to as much as 35% of the total number of electrons in this energy interval. In the quasiequilibrium state, the belt must therefore be a "pile-up" in the energy spectrum of electrons in the
Card 1/3

ACCESSION NR: AP4031626

energy zone of 11-25 kev. A "plateau" in the intermediate zone of the belt leads to a decrease in the initial anisotropy. In this zone the concentration of electrons at the maximum for the belt may change because of spatial redistribution of entrapped particles. Ultralow-frequency noise and particle streams in the atmosphere may be localized by longitude, since the drift time of electrons with energies in the vicinity of 20 kev is on the order of 24 hours, much greater than the damping time of the ultralow-frequencies. The presence of external sources of ultralow-frequency radiation (such as artificial sources) may change the redistribution time and the stream of particles leaving the belt. The authors consider their computations preliminary. They point out that a detailed explanation of the instability factor in the belt in producing the observed effects awaits an accumulation of experimental data on the electron spectrum in the belt and on simultaneous observations on the intensities of entrapped particles, ultralow-frequency noise, and polar auroras. The indicated mechanism probably applies chiefly to the middle latitudes. Other mechanisms may be at work in the zone of polar auroras, where the effect of solar corpuscular streams is direct. "The authors express their thanks to B. N. Gershman for his interest in the work and for his remarks." Orig. art. has: 1 figure and 31 formulas.

Card 2/3

ACCESSION NR: AP1031626

ASSOCIATION: Radiofizicheskiy institut pri Gor'kovskom gosudarstvennom universitete (Institute of Radiophysics, Gorkiy State University)

SUBMITTED: 16Nov63

DATE ACQ: 30Apr64

ENCL: 00

SUB CODE: ES

NO REF SOV: 012

OTHER: 016

Card 3/3

ACCESSION NR: AP4039725

S/0141/64/007/002/0251/0261

AUTHORS: Andronov, A. A.; Zheleznyakov, V. V.; Petelin, M. I.

TITLE: On the kinetic instability of a homogeneous magnetoactive plasma

SOURCE: IVUZ. Radiofizika, v. 7, no. 2, 1964, 251-261

TOPIC TAGS: plasma instability, magnetoactive plasma, plasma distribution, Boltzmann equation, plasma electron oscillation, plasma wave absorption

ABSTRACT: Results previously obtained by one of the authors (V. V. Zheleznyakov, IVUZ Radiofizika v. 4, 619, 1961) are generalized and used for an analysis of the kinetic instability of a homogeneous magnetoactive plasma with a specified momentum distribution function, in which the electromagnetic waves propagate at an arbitrary angle to the magnetic field. Unlike the case of longitudinal propagation

Card 1/2

Card 2/2