33059

S/169/61/000/012/059/089
D228/D305

A more accurate...

where n is the mean monthly cloudiness in portions of unity, k is the numerical coefficient expressing the part of the summary radiation that does not pass through the continuous cloud cover, α is the albedo of the ground surface in the environs of a given point, and γ is the portion of radiation reflected from the atmosphere to the ground surface. The verification of the formula's accuracy, made from the data of 4 stations situated between 50 and 60°N, gave satisfactory results. 18 references. [Abstracter's note: Complete translation.]

Card 2/2

AVERKIYEV, M.S.

A specific feature of the isolation of eastern and western walls of buildings. Meteor.i gidrol. no.5:26-27 My '61. (MIRA 14:4)
(Solar radiation)

AVERKIYEV, M.S.

Universal formula for calculating total radiation. Meteor. i gidrol. no.2:27-30 F '62. (MIRA 15:2)
(Solar radiation)

AVERKIYEV, M.S. (Moskva)

Determining the coefficient of atmospheric transparency. Meteor. i gidrol. no.11:36-39 N '62. (MIRA 15:12)
(Atmospheric transparency)

AVERKIYEV, M.S.; RYAZANOVA, L.A. (Biryukova)

Solar radiation of the ideal atmosphere and the turbidity of the real one. Vest. Mosk. un. Ser. 5: Geog. 18 no.5:14-25 S-O '63. (MIRA 16:11)

1. Kafedra klimatologii Moskovskogo universiteta.

AVERKIYEV, M.S., kand. fiz.-matem. nauk; RYAZANOVA L.A., kand. geograf. nauk

Coefficients of transparency of an ideal atmosphere at different heights and their use for the estimation of the turbidity of a real atmosphere. Meteor. i gidrol. no.3: 24-26 Mr '64. (MIRA 17:3)

1. Moskovskiy gosudarstvennyy universitet i TSentral'naya aerologicheskaya observatoriya.

AVERKIYEV, M.S., kand. fiz.-matem. nauk

Size of a region whose mena albedo influences the total radiation at a given point. Meteor. i gidrol. no.8:30-31 Ag '64
(MIRA 17:8)

1. Moskovskiy gosudarstvennyy universitet.

AVERKIYEV, M.S.

Influence of the underlying surface albedo on diffuse radiation. Vest. Mosk. un. Ser. 5: Geog. 20 no.1:37-41 Ja-F '65. (MIRA 18:3)

1. Kafedra klimatologii Moskovskogo universiteta.

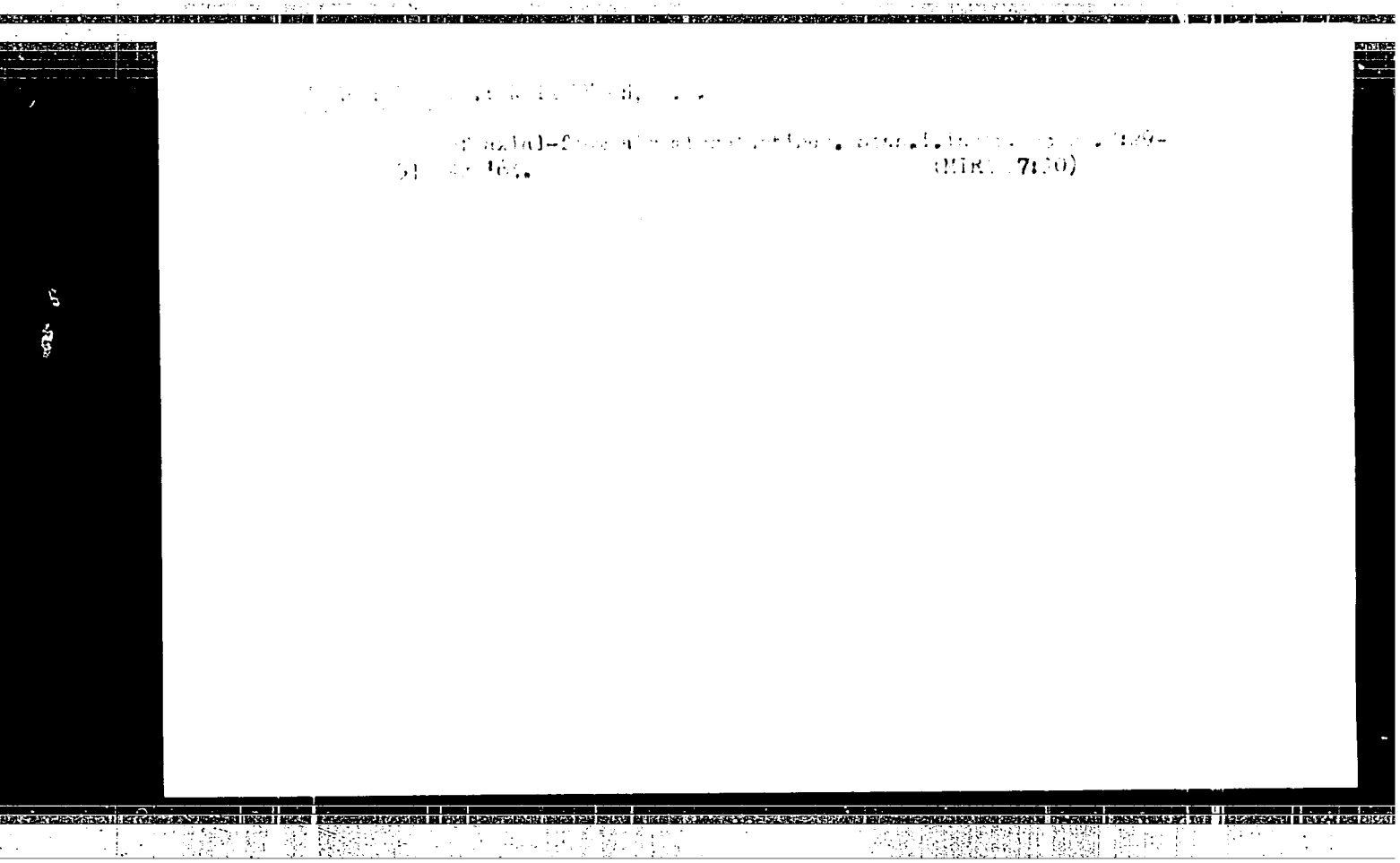
AVERKIYEV, N.P.; YEFIMOV, P.A.; MAKAROV, N.A.

[Collective farm "XX Parts"ezd"] Kolkhoz imeni XX parts"ezda. Leningrad, Lenizdat, 1959. 125 p. (MIRA 13:12)
(Collective farms)

KASTORIN, Aleksandr Aleksandrovich, kand.ekon.nauk. Prinimali uchastiye: AVERKIYEV, N.P., dotsent; ALEKSEYEV, T.D., dotsent. [illegible], A.L., red.; DRANNIKOVA, M.S., tekhn.red.

[Problems of economics and organization in the agriculture of the U.S.S.R. for study in school; manual for teachers] Nekotoryye voprosy ekonomiki i organizatsii sel'skogo khoziaistva SSSR dlia izucheniia v shkole; posobie dlia uchitelia. Moskva, Gos.uchebno-pedagog.izd-vo M-va prosv.RSFSR, 1961. 290 p. (MIRA 14:6)

1. Leningradskiy sel'skokhozyaystvennyy institut (for Averkiyev, Alekseyev).
(Agriculture--Economic aspects)



L 44211-66 EWT(1)/EWT(m) JD

ACC NR: AR6025369 SOURCE CODE: UR/0285/66/000/004/0022/0022

AUTHOR: Averkiyev, S. M.; Dorofeyev, V. M.; Zakharov, Yu. A. 14 B

ORG: none

TITLE: A brake for testing axial microturbines

SOURCE: Ref. zh. Turbostroyeniye, Abs. 4.49.137

REF SOURCE: Tr. Kuybyshevsk. aviats. in-t, vyp. 22, 1965, 15-21

TOPIC TAGS: microturbine, axial microturbine, brake, test brake/UIMT-6 brake

ABSTRACT: A study has been made of the design, characteristics, and operational features of the UIMT-6 brake manufactured by the Thermodynamic Laboratory of the Kuybyshev Aviation Institute for Research on Microturbines and their Components. [Translation] [FM]

SUB CODE: 13/

Card 1/1 mT

S/0121/64/000/008/0029/0031

ACCESSION NR: AP4043978

AUTHORS: Averkiyev, S. M.; Natalevich, A. S.

TITLE: Series of axial air microturbines

SOURCE: Stanki i instrument, no. 8, 1964, 29-31

TOPIC TAGS: turbine, axial flow engine, rotor blade, nozzle flow

ABSTRACT: The characteristics of partial axial air microturbines (about 5-hp output) designed and developed at the Kuyby*shevskiy aviatsionny*y instituta (Kuybyshev Aviation Institute) in collaboration with the Tsentral'noye konstruktorskoye byuro (Central Construction Bureau) were investigated. The rotor is 100 mm in diameter with an angular speed of 20 000 to 100 000 rotations per minute. The volume flow rate varies within 0.07 to 0.37 mm^3/min. The critical dimensions in the nozzle vary between 1.8 to 8.0 mm^2 and consequently induce large friction and turbulence losses as compared to standard size tubines. The efficiency determined by

$$\eta_{t.m} = \frac{\Delta T_t'}{T_0'\left[1 - \left(\frac{p_2}{p_0}\right)^{0,286}\right]}$$

does not exceed 0.6. Five microturbines were tested, and their effective horsepower outputs N_E were determined. The data include graphical

Card 1/2

ACCESSION NR: AP4043978

plots of N_E versus rotation rate, N_E versus exit pressure, N_E versus U/C (U - mean angular speed of rotor, C - rotor speed under adiabatic flow conditions), and a curve indicating the overall economy of pneumatic grinding machines powered by these microturbines. The effective horsepower output is seen to increase in proportion to the rotor diameter (0.1 for 22.5-mm diameter turbine and 0.5 for a 60.0-mm turbine). Orig. art. has: 4 figures, 2 formulas, and 1 table.

ASSOCIATION: none

SUBMITTED: 00 ENCL: 00

SUB CODE: PR NO REF SOV: 001 OTHER: 000

Card 2/2

AVERYANOV, V. D.

"The Results of Selecting Grasses for Utilization on the Waste Sands in the Region Around the City of Dzerzhinsk." Cand Biol Sci, Chair of Plant Systematics and Geobotany, Gor'kiy State U, Gor'kiy, 1954. (KL, No 18, Apr 55)

SO: Sum. No. 704, 2 Nov 55 - Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (16).

AVERKIYEV, V.D.

Some data on growing perennial lupine (Lupinus polyphyllus Lindl.) on deep sand. Uch.zap.GGPI 20:157-167 '58.
(MIRA 13:6)

(Lupine)

AVERKIYEV, V.G. ; MASHNEV, M.M., kand.tekhn.nauk

Over-all mechanization and automatization of rolling stock repair. Zhel.dor.transp. 42 no.5:71-74 My '60. (MIRA 13:9)

1. Zamestitel' nachal'nika Oktyabr'skoy zheleznoy dorogi, g. Leningrad.
(Automatic control) (Railroads--Repair shops)

AV...KIYEV, V.G. (g.Leningrad); MANIN, I.I. (g.Leningrad)

Better regulation of wages on the Oktiabr' Railroad. Zhel.dor. transp. 43 no.4:41-44 Ap '61. (MIRA 14:3)

1. Zamestitel' nachal'nika Oktyabr'skoy dorogi (for Averkiyev).
2. Nachal'nik otdela truda, zarplaty i tekhniki bezopasnosti Oktyabr'skoy dorogi (for Manin).
(Railroads—Salaries,pensions,etc.)

BRAUN, David Antsin . RYB'YEV I.A., prof., doktor tekhn. nauk, retsenzent; [illegible] BERG, B.G., prof., retsenzent; KOROVNIKOV, B.D., dots. kand. tekhn. nauk, retsenzent; AVERKIYEV, V.I., dots. kand. tekhn. nauk, retsenzent; BOCHAROVA, Yu.F., red.

[New materials in engineering] Novye materialy v tekhnike. Moskva, Vysshaia shkola, 1965. 194 p. (MIRA 18:10)

AVERKIYEV, V. I.

"Study of the Initial Heating of Aluminum, Duraluminum, Copper, and Brass Ingots." Cand Tech Sci, Moscow Inst of Non-ferrous Metals and Gold imeni M. I. Kalinin, Ministry of Higher Education USSR, Moscow, 1954. (KL, No 7, Feb 55)

SO: Sum. No. 631, 26 Aug 55-Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (14)

AM4021939 BOOK EXPLOITATION S/

Averkiyev, Vladimir Pavlovich

Fish location and electronavigation equipment on ships (Sudovy*ye ry*bopoiskovy*ye i elektronavigatsionny*ye pribory*), Leningrad, Sudpromgiz, 1963, 231 p., illus., biblio. 9,000 copies printed.

TOPIC TAGS: electronavigation equipment, hydroacoustic navigation equipment, echo depth finder, gyrocompass, automatic rudder, hydrodynamic log

PURPOSE AND COVERAGE: The book is a text for the course "Electronavigation Equipment" for students in maritime fleet schools of the fish industry and for courses on improving the ships and equipment of the fishing fleet. It can be useful for students in ship building technicums. The book examines the fundamentals of the theory, the design, electrical circuits and the use of fish location and electronavigation equipment on ships of the fishing fleet.

TABLE OF CONTENTS [abridged]:

Card 1/3

AVERKIYEV, V.P.

Moscow conference of specialists from the Council of Mutual Economic Assistance on problems affecting the use of ionizing radiation. Atom. energ. 19 no.3:313-314 S '65.

(MIRA 18:9)

L 39853-66 EPF(n)-2/EWT(m)/EWP(j)/EWA(h)/EWA(l)/T IJP(c) GD/WW/RM/GD-2

ACC NR: AP6018398 SOURCE CODE: UR/0089/65/019/003/0313/0314

AUTHOR: Averkiyev, V. P.

ORG: none

TITLE: Moscow conference of CMA specialists on problems of usage of ionizing radiation

SOURCE: Atomnaya energiya, v. 19, no. 3, 1965, 313-314

TOPIC TAGS: ionizing radiation, radiation chemistry, polymer, scientific conference, polyethylene plastic, vulcanization, copolymer, rubber

ABSTRACT: The conference of the members of the Council of Mutual Assistance on usage of ionizing radiation took place in Moscow, 27-29 May 1965 at the Institute of Physical Chemistry of the Academy of Sciences. A total of 30 reports from the various national delegations were heard: Bulgaria, Hungary, Poland, Rumania, Czechoslovakia and the USSR were represented. The reports were on many subjects, including: radiation cross-linking of polyethylene to increase temperature stability; radiation vulcanization of rubber; pre-planting irradiation of seeds; production of copolymers with poly-formaldehyde and styrol, methyl methacrylate, etc.; refining of natural and artificial materials; radiolysis of oil-refining produced hydrocarbons; and many others. A plan was developed for cooperative work on the following problems: the

Card 1/2

L 39853-66

ACC NR: AP6018398

radiation chemistry of polymers; radiolysis and radio-chemical synthesis of organic compounds; usage of physical chemistry methods of investigation of radiochemical and radio-catalytic processes; radiation sterilization of medical instruments and equipment; and the development of installations for radio-chemical processes and sterilization processes. [JPRS]

SUB CODE: 07, 11, 13, 18 / SUBM DATE: none

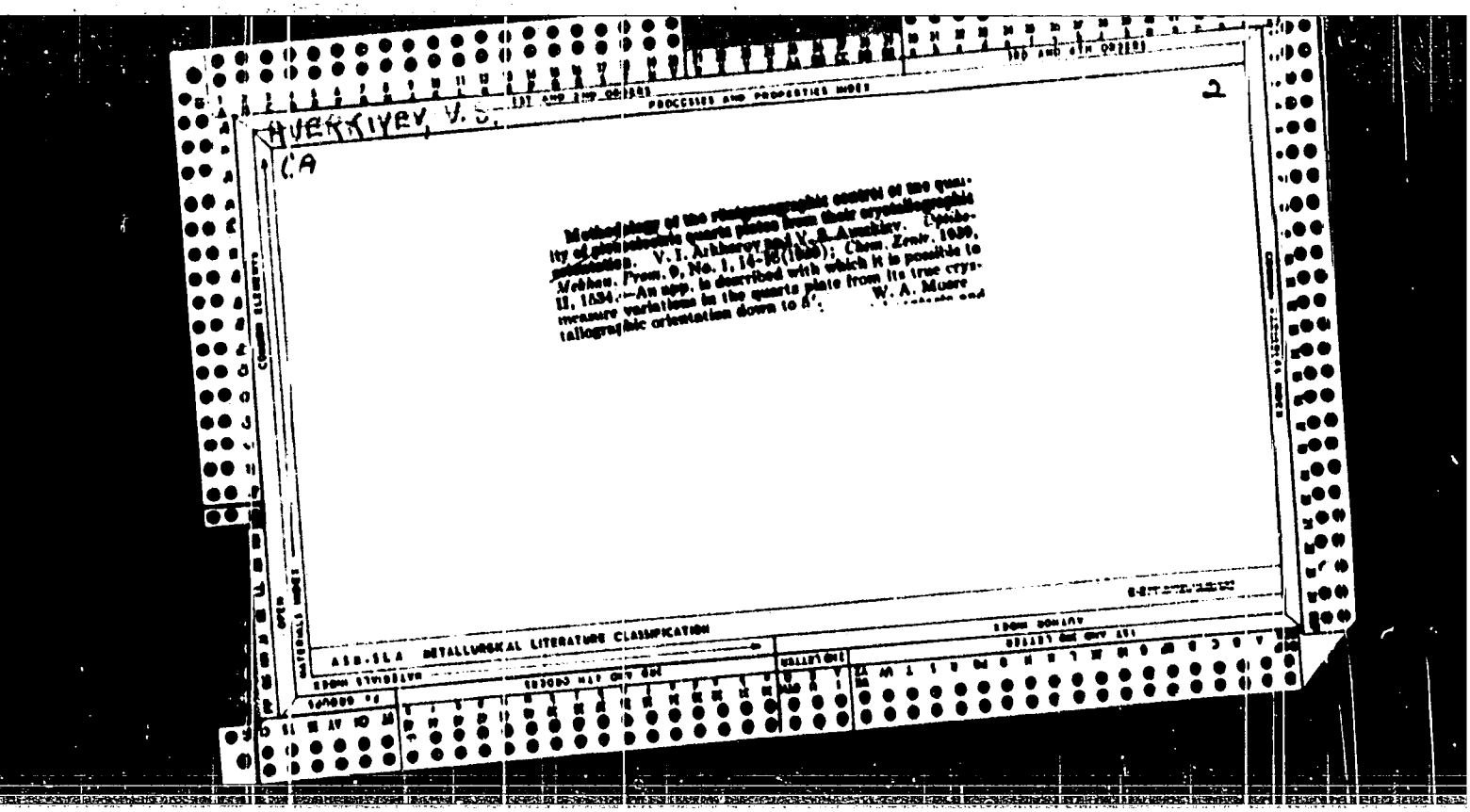
Card 2/2 dk S

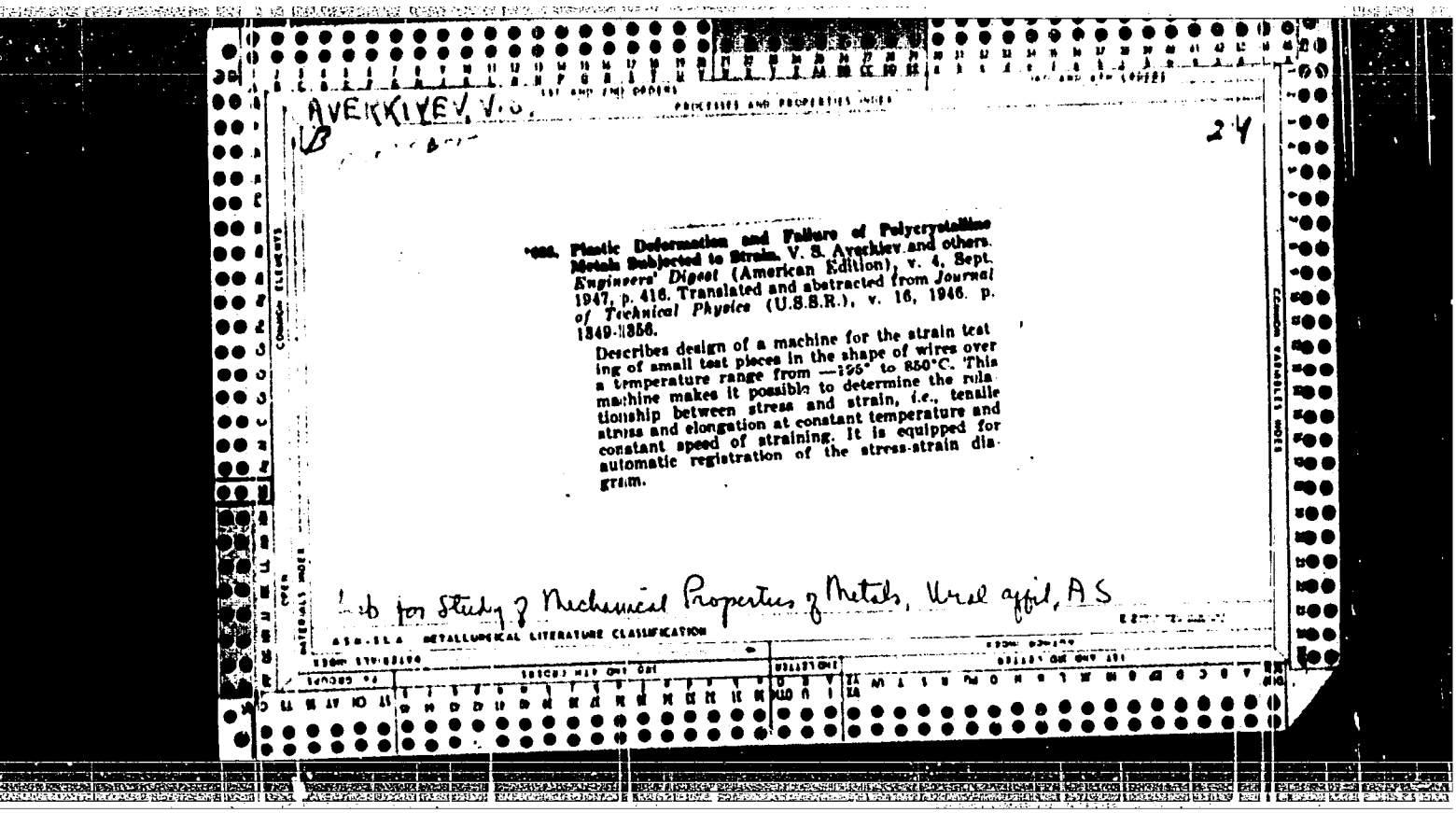
AVERKIYEV, V. S.

PROCESSES AND PROPERTIES INDEX

A Sachs Camera. A. P. Kamar and V. S. Averkiev (Zhurnal Tekhnicheskoy Fiziki (J. Tech. Physics), 1933, 3, (10), 1633–1635). [In Russian.] A new type of Sachs camera for X-ray examination at high temperature and in vacuo is described. —N. A.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION





AVERKIYEV, V.S.

24

Plastic Deformation and Failure of Polycrystalline Metals Subjected to Strain. V. S. Averkiev and others. *Engineers' Digest* (American Edition), v. 4, Sept. 1947, p. 416. Translated and abstracted from *Journal of Technical Physics* (U.S.S.R.), v. 16, 1946. p. 1349-1356.

Describes design of a machine for the strain testing of small test pieces in the shape of wires over a temperature range from —195° to 850°C. This machine makes it possible to determine the relationship between stress and strain, i.e., tensile stress and elongation at constant temperature and constant speed of straining. It is equipped for automatic registration of the stress-strain diagram.

Lab for Study of Mechanical Properties of Metals, Ural affil, AS

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

[redacted]

"Apparatus for the Plotting of Texture Graphs," Zav. Labor. No. 8, 643, 1939.

AVERKIYEV, V. S., G. N. KOLESNIKOV, A. T. MOISEYEV, and M. V. YAKUNOVICH

"Device for Testing of Stress Relaxation in Tension"

Problems in the Theory of Heat Resistance of Metal Alloys, Moscow, Izd-vo AN SSSR, 1958, 150 pp. (Trudy, Inst. Fiz. Metal, Ural filial, AN SSSR)

The articles in this book constitute reports on extensive studies, conducted between 1949 and 1954 by the Inst. Physical Metallurgy Urals Branch AS USSR, and devoted to the development of a general theory of heat resistance.

AVERKIYEV, V.S.; KOLESNIKOV, G.N.; MOISEYEV, A.I.; YAKUTOVICH, M.V.

Arrangement for testing stress relaxation during tension.
Trudy Inst.fiz.met.UFAN SSSR no.19:71-94 '58. (MIRA 12:2)
(Strain gauge) (Deformations (Mechanics)--Testing)

SOV/180-59-3-22/43

AUTHORS: Averkiyev, V.S., Luzhinskaya, M.G. and Shur, L.Ya. (Sverdlovsk)

TITLE: Improving the Properties of High Coercivity Alloys by Thermal-Mechanical Treatment

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh nauk, Metallurgiya i toplivo, 1959, Nr 3, pp 125-127(USSR)

ABSTRACT: It is possible to control the magnetic properties of alloys to some extent by influencing their crystalline structure. Two of the present authors have previously described a new method of improving the properties of mechanically hard alloys by the application of tension during the process of heat treatment. This method, known as thermal-mechanical treatment, has been applied to several alloys and the greatest effect was obtained with Vikaloy consisting of 12% V, 52% Co and the remainder Fe. A detailed study of the influence of heat and mechanical treatment showed that the increase in coercive force that can be achieved by this treatment is mainly associated with increasing magnetic anisotropy of the alloy whilst the increase in the remanent induction is associated with strengthening of the

Card 1/3

Improving the Properties of High Coercivity Alloys by Thermal-Mechanical Treatment

magnetic texture. A study of the influence of the tensile loading was made and the results are plotted in Fig 1 for various loads applied during tempering of a specimen at temperatures of 580, 600 and 620°C for thirty minutes. At each tempering temperature there is an optimum value of load which gives the greatest increase in the coercive force and some increase in the remanent induction. Further increase in the load at the given temperature reduces the remanent induction and gives a smaller increase in the coercive force. The optimum conditions for Vikaloy are tempering at 600°C for thirty minutes with the application of the tensile stress of 30 kg/mm^2. The best conditions may, however, vary somewhat from one batch to another. The conditions of treatment must be maintained very constant if alloys of consistent properties are to be produced, temperature variations should not exceed $\pm$ 2°C. The rate of heating should be strictly constant and other conditions are also mentioned. In view of these requirements an installation was constructed for the application of mechanical and

Improving the Properties of High Coercivity Alloys by Thermal-Mechanical Treatment

thermal treatment, it is illustrated diagrammatically in Fig 1 and is briefly described. The magnetic material in the form of wire is maintained under tension and an electric furnace is gradually moved along. With this equipment material can be prepared in the form of wires in lengths up to three metres with uniform coercive force and remanent induction to within ± 2%. It has been found that heat and mechanical treatment improves other alloys besides that mentioned, including alloys with vanadium contents of 8 and 14% and also iron-manganese alloys containing 15% manganese. It is to be expected that similar treatment will influence the magnetic properties of other magnetically hard alloys in a similar way. There are 2 figures and 2 Soviet references.

ASSOCIATION: Institut fiziki metallov Ural'skogo filiala Akademii nauk SSSR (Institute of Metal Physics, Ural Branch, Academy of Sciences, USSR)

SUBMITTED: April 1, 1959

Card 3/3

AVERKIYEV, YU. A.

"Study of the Shingling of Hollow Cylindrical Ingots." Min. Higher Education USSR, Moscow Order of Labor Red Banner Higher Technical School imeni N. E. Bauman, Moscow, 1955. (Dissertation for the Degree of Candidate of Technical Sciences)

SO: Knizhnaya Letopis', No. 22, 1955, pp 93-105

SOV/124-58-2-2150

Translation from: Referativnyy zhurnal, Mekhanika, 1958, Nr 2, p 92 (USSR)

AUTHOR: Averkiyev, Yu. A.

TITLE: Analysis of the Swaging of Hollow Cylindrical Billets by a Conical Die (Analiz obzhima polykh tsilindricheskikh zagotovok konicheskoy matritsey)

PERIODICAL: V sb.: Mashiny i tekhnologiya obrabotki metallov davleniyem Mashgiz, 1955, pp 21-37

ABSTRACT: Empirical formulas are set up for the determination of the maximal swaging force exerted by a conical die upon hollow cylindrical billets. The formation of transversely directed folds is examined. Optimal values are adduced for the taper angles at which the swaging force attains a minimum.

Ye. A. Popov

Card 1/1

SOV/124-57-4-4749

Translation from: Referativnyy zhurnal. Mekha . ca, 1957, Nr 4, p 126 (USSR)

AUTHOR: Averkiyev, Yu. A.

TITLE: An Analysis of the Process of Swaging of Hollow Cylindrical Billets With the Aid of a Die With a Curve Generatrix (Analiz obzhima polykh tsilindricheskikh zagotovok matritsey s krivolineynoy obrazuyushchey)

PERIODICAL: V sb.: Mashiny i tekhnol. obrabotki metallov davleniyem. Moscow, Mashgiz, 1955, pp 73-91

ABSTRACT: The author examines the process of the swaging of hollow, thin-walled, cylindrical billets which are cold-worked with a die having a curved generatrix with a constant radius of curvature. By introducing a number of simplifying assumptions the solution is reduced to a form which is readily applicable to practical engineering computations. The experimental data presented are compared with computational results.

N. F. Lebedev

Card 1/1

AVERKIYEV, Yu.A., inzhener.

Analysis of conical die swaging of hollow cylindrical blanks.
[Trudy] MVTU no.42:21-37 '55. (MLRA 9:5)
(Forging) (Strains and stresses)

137-58-6-12219

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 6, p 149 (USSR)

AUTHOR: Averkiyev, Yu.A.

TITLE: A Method of Allowing for Work-hardening in the Analysis of Form-changing Operations in Cold Stamping (Metodika ucheta uprochneniya v analize formoizmenyayushchikh operatsiy kholodnoy shtampovki)

PERIODICAL: V sb.: Mashiny i tekhnol. obrabotki metallov davleniyem. (MVTU, 79). Moscow, Mashgiz, 1957, pp 91-98

ABSTRACT: It is observed that work-hardening occurring on plastic deformation (D) of metals under the conditions of cold forming effects a significant change in their plastic properties and mechanical characteristics: the elastic limit, σ_s, σ_b, and indentation hardness. Therefore, in solving problems having to do with the determination of the force conditions to apply during cold-forming operations, a proper allowance for work-hardening (AWH) significantly influences the accuracy of the results. One of the shape-changing operations in the stamping of sheet is used to illustrate a method of AWH of metals by various extant methods, and an evaluation of the disagreements between

Card 1/2

137-58-6-12219

A Method of Allowing for Work-hardening in the Analysis (cont.)

the results is offered. A method of AWH of metal in the cold swaging of hollow cylindrical blanks is cited as an example. It is noted that in solution of problems of the pressworking of metals, two methods of AWH are employed in the main 1.Hardening is calculated prior to the simultaneous solution of the equations of plasticity and of the static equilibrium. 2. Hardening is calculated by the mean (or average) value of resistance to deformation after simultaneous solution of the static-equilibrium and plasticity equations, written without AWH. In order to evaluate the differences appearing as the result of the use of the different methods of AWH, methods of AWH by means of an exponential function, a linear function, and the mean value of deformation resistance in the process of D are examined. On the basis of an analysis of the various methods of AWH, and also of an examination of graphs for the relationship between the stress and the swaging factor, it is concluded that the method of AWH by the mean resistance to D for practicable degrees of D ($\sim$50%) assure accuracy sufficient for practical purposes, and that this accuracy increases with diminishing degree of D. Other methods of AWH involve complicated mathematical transformations and result in complicated equations which render difficult practical utilization thereof. AWH by exponential function is the most accurate in the sense of agreement with experimental data, but the differential equations resulting can not always be solved rigorously. 1. Metals--Deformation 2. Machine tools--Applications
Card 2/2 3. Metals--Hardening G.F.

AVERKIYEV, YU.A.

137-58-5-9553

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 5, p 104 (USSR)

AUTHOR: Averkiyev, Yu.A.

TITLE: An Investigation of the Swaging of Hollow Cylindrical Blanks (Issledovaniye obzhima polykh tsilindricheskikh zagotovok)

PERIODICAL: V sb.: In..nern. metody rascheta tekhnol. protsessov obra-botki metallov davleniyem. Moscow - Leningrad, Mashgiz, 1957, pp 167-190

ABSTRACT: An examination is made of the determination of stresses, permissible degrees of deformation, height of the initial blank (B), wall thickness, and optimum geometry of the tool used for swaging in a die with curved or linear generatrix. Analytical formulas in the form of exponential and linear functions are derived on the basis of equilibrium equations for unit volumes and conditions of plasticity in terms of two-dimensional stresses with and without accounting for the hardening factor (HF). It is shown that the maximum meridional compressive stresses along a generatrix of the B are found by taking HF into account by means of a linear function. Experimental verification of the analytical formulas performed in the swaging of tubes of low-carbon steel, Cu,

Card 1/2

137-58-5-9553

An Investigation of the Swaging of Hollow Cylindrical Blanks

brass, and Duralumin demonstrates a discrepancy of up to 15% between the experimental and the theoretical data. A design is proposed of a die with a sliding external lug to prevent buckling and permitting a 20% diminution of the swaging factor k=d/D (d being the diameter of the swaged B and D the diameter of the initial B) for B with bottoms and of 60% for those without. The use of swaging significantly simplifies the production process, as is demonstrated by the example of the manufacture of the oil-filter housing for the Moskvich car.

M. Ts.

1. Dies--Design 2. Dies--Stresses 3. Cylindrical shells--Stresses
4. Stress analysis

Card 2/2

AVERKIYEV, Yu.A., kand.tekhn.nauk.

Taking into consideration the hardening in analyzing the process of shaping operations by cold stamping. [Trudy] MVTU no.79:91-98 '57. (MIRA 11:1)
(Sheet-metal work)

AVERKIYEV, Yu.A.

Determining an optimum opening in dies for the edge bending of strips. Izv. vys. ucheb. zav.; chorn. met. no.2:73-77 '60. (MIRA 15:5)

1. Rostovskiy-na-Donu institut sel'skokhozyaystvennogo mashinostroyeniya.
(Dies (Metalworking)) (Sheet-metal work)

AVERKIYEV, Yu.A., kand. tekhn. nauk; PISANKO, D.S., inzh.

Punch for bending angular profiles with stretching. Trakt. i sel'khozmash no.6:41-42 Je '65. (MIRA 18:7)

1. Rostovskiy institut sel'skokhozyaystvennogo mashinostroyeniya.

AVERKIYEV, Yu.A., kand. tekhn. nauk

Practices in stamping the frame of an oil filter without interoperational annealing. Trakt. i sel'khozmash. 33 no.4: 44-45 Ap '63. (MIRA 16:10)

1. Rostovskiy institut sel'skokhozyaystvennogo mashinostroyeniya.
(Tractors—Engines—Oil filters)

AUTHORS: Averkiyeva, G. K., Yemel'yanenko, O. V. -2-1

TITLE: Effect of Impurities on the Electric Properties of Gallium ... (Vliyaniye primesey na elektricheskiye svoystva ... galliya)

PERIODICAL: Zhurnal tekhnicheskoy fiziki, 1958, Vol 28, Nr 9, pp. 1945-1947 (USSR)

ABSTRACT: The present article presents information on experiments in which a number of elements of the columns I - VI were introduced into a compound of the type $A^{III}B^{V}$, that is to say into gallium arsenide. Such a study may be expected to yield evidence bearing on the effect of elements of various groups upon the electric properties of GaAs and upon the most effective donor and acceptor admixtures. The samples were produced by an immediate joint melting of the components in evacuated tightly soldered quartz ampoules. The evidence obtained leads to the following statements: 1) The elements of the II column, Zn and Cd act in GaAs as acceptors, those of the VI column, S, Se and Te as donors just as they do in other $A^{III}B^{V}$ compounds. 2) Copper is an acceptor, this result complying with that found by Smirous (Shmirous) (Ref 1) for GaSb. 3) The elements of the III.- V.column, In, Si, Ge, Sn,

Card 1/4

Effect[illegible] Impurities on the Electric Properties of Gallium Arsenide

Sb do not form active centers in GaAs. 4) The mobility of electrons and of holes is only little dependent upon the type of impurity and upon the concentration of the admixtures. No influence of the impurities upon the strength of GaAs could as yet be found, as only in a few cases it was possible to measure the microstrength of the excess phases. Samples with Se impurities exhibited a strength coinciding with that of pure germanium. Indium produces an excess phase which exhibits a whole spectrum of microstrength values, which could be identified with such of the solid $Ga_xIn_{1-x}As$ solutions.

The elements of the II. column, zinc in particular, are better soluble in gallium arsenide than the elements of the VI. column. Zinc proved to be the most effective acceptor admixture and selenium as the most effective donor admixture. The crystals formed by samples with Zn- and Se admixtures had the same dimensions as those without admixtures. When the acceptor elements Cu and Cd were introduced into a n-type material a high mutual compensation of acceptors and donors was found. This occurred more frequently than [illegible] could be ex-

Effect of Impurities on the Electric Properties of GaSb

...ted from the premise that the donor and the acceptor impurities dissolve independently in GaSb. There is reason to believe that the dissolving of the acceptor impurities is considerably facilitated by the existence of non-compensated donor centers. D. N. Nasledov and N. A. Goryunov discussed ... with the authors. A. V. Inrov assisted in the preparation of the samples and in the preparation and the study of the polished sections. There are 1 table and ... references, 1 of which is Soviet.

ASSOCIATION: Leningradskiy fiziko-tekhnicheskiy institut AN SSSR (Leningrad Physical and Technical Institute, AN SSSR)

SUBMITTED: April 16, 1958

Card 2/2

S/137/61/000/010/020/056
A006/A101

AUTHORS: Goryunova, N.A., Averkiyeva, G.K., Snaravskiy, P.V., Tovpentsev, Yu.K.

TITLE: Investigation of quaternary alloys based on indium antimonide and cadmium telluride

PERIODICAL: Referativnyy zhurnal. Metallurgiya, no. 10, 1961, 44, abstract 100344 (V sb. "Fizika i khimiya", Leningrad, 1961, 22 - 25)

TEXT: The authors present brief information on investigating a pseudo-binary section CdTe-InSb of the quaternary Cd-Te-In-Sb system. The alloys investigated were prepared by direct fusion of the initial materials in evacuated quartz ampoules and were subjected to metallographical analysis. Simultaneously microhardness was determined. It was established that in the range of 95 - 100% InSb concentration there is a homogeneous area with ZnS structure. In the other points of the system two phases were revealed whose microhardness exceeds that of the initial components - CdTe and InSb.

A. Nashel'skiy

[Abstracter's note: Complete translation]

Card 1/1

S/070/62/007/006/004/020
E073/E335

AUTHORS: Ozolin'sh, G.V., Averkiyeva, G.K., Iyevin'sh, A.F. and Goryunova, N.A.

TITLE: X-ray diffraction investigations of some A^3B^3-type compounds with compositions deviating from the stoichiometric

PERIODICAL: Kristallografiya, v. 7, no. 6, 1962, 850 - 853

TEXT: The aim of the investigations was to determine the width of the concentration range in which indium and gallium arsenide, made from 99.98% purity materials, remained homogeneous. The specimens were synthesised in evacuated quartz ampules with the following sequence of operations: slow heating to 650 °C for 3 h; holding at this temperature for 2 hours; slow heating to 100 °C above the fusion temperature of the compound and holding for 30 min; cooling together with the furnace for 12 - 14 hours. Specimens of stoichiometric and non-stoichiometric composition were synthesised. The substance was broken-up into powder prior to taking the X-ray diffraction pictures and annealed in evacuated quartz ampules for 5 hours at 550 °C. Results: within the errors
Card 1/2

X-ray diffraction ....

of determination (0.0001 Å) the lattice spacings did not depend on the excess of one or the other compound with respect to stoichiometry. Without correcting for refraction, the following values were obtained for +25 °C:

InAs: a = 6.05858 ± 0.00005 Å
GaAs: a = 5.65515 ± 0.00010 Å .

There are 2 tables.

ASSOCIATION: Institut khimii AN LatvSSR (Institute of Chemistry of the AS Latvian SSR)
Fiziko-tekhnicheskiy institut AN SSSR (Physico-technical Institute of the AS USSR)

SUBMITTED: December 8, 1961

AVERKIYEVA, G K)

12

(G. K.?)

Morphological features of crystals of GaP. G. V. Averkiyeva, A. S. Borshchevskiy, G. K. Kalyuzhnaya, A. D. Smirnova, D. N. Tret'yakov, N. N. Takhtareva (10 minutes).

Features of the growth of crystals of silicon carbide of the cubic modification from the gaseous phase. A. A. Pletyushkin, S. N. Gorin, L. M. Ivanova (10 minutes).

Investigation of the physical properties of semiconducting compounds with the lattice of ZnS and NaCl in the melting region and liquid state. V. M. Glazov, S. N. Chizhevskaya, N. N. Glagoleva (10 minutes).

Report presented at the 3rd National Conference on Semiconductor Compounds, Kishinev, 16-21 Sept 1963

S/070/63/008/002/011/017
E073/E335

AUTHORS: Ozolin'sh, G.V., Averkiyeva, G.K., Goryunova, N.A. and Iyevin'sh, A.F.

TITLE: X-ray investigation of gallium and indium antimonides

PERIODICAL: Kristallografiya, v. 8, no. 2, 1963, 272

TEXT: To elucidate the width of the range of homogeneity in type $A^{III}B^{V}$ compounds the exact lattice constants of indium and gallium antimonides were determined by the asymmetric method, using the technique described in an earlier published paper of the author. The preparations were synthesized both in the stoichiometric composition as well as with deviations by 50 mole.% to both sides of the stoichiometric composition. The latter preparations showed a second phase which could be detected on polished sections and on X-ray diffraction patterns. The microhardness of the basic phase ($A^{III}B^{V}$) for these preparations corresponded to the microhardness of the compounds. The gallium antimonide was photographed using chromium and copper radiation. Indium antimonide was photographed using cobalt and nickel radiation and 23 exposures were made. The following lattice

Card 1/3

X-ray investigation ....

constants were obtained (Å):

	GaSb	InSb
Stoichiometric composition	6.09614	6.47965
Excess 50% Sb	6.09613	6.47961
Excess Ga or In	6.09609	6.47962.

The divergence between the lattice constants of the preparations with the stoichiometric composition and those which deviated from the stoichiometric was insignificant and fully within the limits of error of the method (± 0.0001 Å). In the same way as in the case of indium and gallium antimonides, the results of which were published earlier by the authors, the here obtained results lead to the conclusion that the lattice constants of the investigated compound type $A^{III}B^{V}$ do not depend on the excess A^{III} or B^{V} during their synthesis. The obtained results permit assuming, for the compounds investigated, the following most likely magnitudes of the lattice constants: for GaSb a = 6.09612 ± 0.00009 Å; for InSb a = 6.47962 ± 0.00012 Å at +25 °C without correction for refraction. The here given errors are maximal and calculated

Card 2/3

S/070/63/008/002/011/017
E073/E335

X-ray investigation ....

as three times the mean square error.

ASSOCIATIONS: Institut khimii AN LatvSSR
(Institute of Chemistry of the AS Latvian SSR)
Fiziko-tekhnicheskiy institut AN SSSR
(Physicotechnical Institute of the AS USSR)

SUBMITTED: October 15, 1962

Card 3/3

L 31653-65 EWT(m)/EWP(b) AFWL/ASD(a)-5/ESD(t) JD/RDW/MLK
ACCESSION NR: AT4044562 S/0000/64/000/000/0044/0056

AUTHOR: Andrikyeva, G.K.; Vaypolin, A.A.; Goryunova, N.A. (Professor)

TITLE: Some ternary compounds of the type A^{2}B^{4}C$_{2}^{5}$ and A^{3}B^{5}C$_{2}^{4}$ and solid solutions based on them

L 12653-65

ACCESSION NR: AT4044562

preliminary. "The thermal conductivity measurements were graciously carried out by our Czech colleague Sbarsas." Orig. art. has: 3 tables and 3 figures.

ASSOCIATION: Institut fiziki i matematiki AN Mol SSR (Institute of Physics and

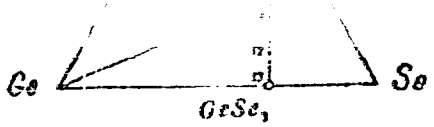


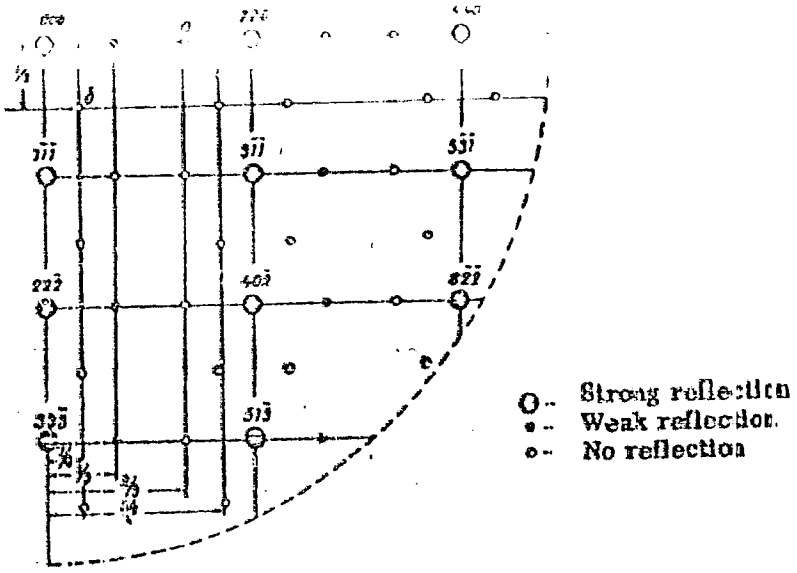
Fig. 1. Diagram of the formation of Cu_2GeSe_3.

Card 3/4

L 12653-65

ACCESSION NR AT4044561

ENCLOSURE: 02



4/4 Fig 2. Zero-network of the reverse lattice of Cu_2GeS_3.

L 36122-66 EWT(m)/T/EWP(t)/ETI IJP(c) RDW/JD/JG

ACC NR: AR6017261 SOURCE CODE: UR/0058/65/000/012/E047/E047

AUTHOR: Goryunova, N. A.; Averkiyeva, G. K.; Vaypolin, A. A.

TITLE: Possibility of obtaining single crystals of multicomponent alloys

SOURCE: Ref. zh. Fizika, Abs. 12E362

REF SOURCE: Sb. Fizika. Dokl. k XXIII Nauchn. konferentsii Leningr. inzh.-stroit. in-ta. L., 1965, 52-53

TOPIC TAGS: single crystal growth, crystal lattice strucutre, alloy system, annealing, zone melting

ABSTRACT: The authors investigated the possibility of obtaining homogeneous quintuple alloys based on GaAs and the ternary compound Cu_2GeSe_3. In the synthesis of the samples, starting only with the composition 60% (3GaAs) - 40% Cu_2GeSe_3, the Debyegrams show one system of lines, corresponding to the ZnS structure. The lattice periods of the alloys approximately obey Vegard's law. However, no complete homogeneity of the samples could be attained: the x ray patterns showed lines of the second phase. By zone melting there was attained an ingot in which a considerable section had a single-phase structure. Single crystals with composition 80% (3GaAs) - 20% Cu_2GeSe_3, with size 3 x 2 x 2 mm, were obtained by the transport-reaction method (using I_2 as the transporter). A. Rabin'kin. [Translation of abstract]

SUB CODE: 20

Card 1/1 pla

L 43081-66 EWT(1)/EWT(m)/T/EWP(t)/ETI IJP(c) UR/0137/65/000/011/0039/0039

ACC NR: AR6011373 (A,N) SOURCE CODE: UR/0137/65/000/011/0039/0039

55 7

B

AUTHORS: Goryunova, N. A.; Averkiyeva, G. K.; Vaypolin, A. A.

TITLE: On the possibility of obtaining single crystals of polycomponent alloys

SOURCE: Ref. zh. Metallurgiya, Abs. 11G275

REF SOURCE: Sb. Fizika. Dokl. k XXIII Nauchn. konferentsii Leningr. insh.-stroit. in-ta. L., 1965, 52-53

TOPIC TAGS: gallium, copper, selenium, arsenic, germanium containing compound, gallium arsenide, alloy, zone melting, annealing

ABSTRACT: The possibility of obtaining homogeneous single crystals of the quintuple system formed on the basis of Ga arsenide and the ternary compound Cu_2GeSe_3 was investigated. For synthesis of specimens starting with 60% ($3GaAs$)--40% Cu_2GeSe_3, the x-ray powder pictures show only one system of lines corresponding to the ZnS structure. The alloy lattice periods follow approximately the law of Vegard. However, a complete homogeneity of specimens was not achieved; the x-ray pictures showed lines of a second phase. Annealing did not remove these lines. Zone melting yielded an ingot, a 10-mm length of which had a one-phase structure. By the method of transport reaction, using iodine as the transporting agent, single crystals of the following composition were obtained: ~ 80% ($3GaAs$)--20% Cu_2GeSe_3, of size 3 x 2 x 2 mm. (From RZh. Fiz) [Translation of abstract]

SUB CODE: 11

UDC: 669.621.315

Refining of tungsten hexachloride and...

lished. The WCl_6 or $MoCl_5$ sublimate obtained by refining, contained less than 0.005% Fe_2O_3 and 0.003% Al_2O_3 per WO_3 or MoO_3 weight. There are 6 figures and 20 references, 18 Soviet-bloc and 2 non-Soviet-bloc.

ASSOCIATION: Moskovskiy institut tonkoy khimicheskoy tekhnologii (Moscow Institute of Fine Chemical Technology) Kafedra tekhnologii redkikh i rasseyannykh elementov (Department of the Technology of Rare and Dispersed Elements)

SUBMITTED: February 11, 1961

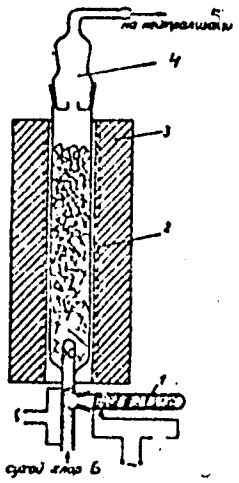


Fig. 6: A column for refining tungsten and molybdenum chlorides
Legend: 1 - evaporator; 2 - salt column; 3 - electric furnace; 4 - condenser; 5 - for neutralization; 6 - dry chlorine.

Card 2/2

KORSHUNOV, B.G.; GOL'DIN, V.I.; AVERKIYEVA, L.A.

Purification of tungsten hexachloride and molybdenum pentachloride from admixtures of iron and aluminum chlorides. Izv.vys.ucheb. zav.; tsvet.met. 5 no.1:101-106 '62. (MIRA 15:2)

1. Moskovskiy institut tonkoy khimicheskoy tekhnologii, kafedra tekhnologii redkikh i rasseyannykh elementov.
(Tungsten--Metallurgy) (Molybdenum--Metallurgy)
(Chlorides)

LYUBARSKIY, L., doktor sel'skokhoz.nauk; RUSAKOVA, N., kand.tekhn.nauk; AVERKIYEVA, N., inzh.

Methods for determining the technological properties of strong wheat. Muk.-elev. prom. 28 no.12:5-6 D '62. (MIRA 16:1)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut zerna i produktov yego pererabotki.
(Wheat) (Flour)

KRAVTSOVA, B.Ye., kand.biolog.nauk; AVERKIYEVA, N.N., nauchnyy sotrudnik

Reproduction of the actual quality of wheat in average daily samples. Soob. i ref. VNIIZ no.4:24-26 '61. (MIRA 16:5)
(Wheat—Analysis and chemistry)

"Sootnosheniye rodovoy i sosedskoy obshchiny u Indeytsev Severnoy Ameriki."

report submitted for 7th Intl Cong, Anthropological & Ethnological Sciences, Moscow, 3-10 Aug 64.

AVERKO, Ye.M.; LONSKIY, A.V.; FILIPPOV, K.F.

Seismoscope with increased sensitivity and time recording accuracy and undistorted form of the seismogram. Vop.din. teor.raspr.seism.voln. no.2:308-311 '59. (MIRA 13:5)
(Seismometers)

9(6)

AUTHOR: Averko, Ye. M.

SOV/54-59-3-28/21

TITLE: Ten-channel Seismoscope

PERIODICAL: Vestnik Leningradskogo universiteta. Seriya fiziki i khimii, 1959, Nr 3, pp 134 - 140 (USSR)

ABSTRACT: The circuit diagram of a seismoscope is described which has the same advantages as the device shown in a previous paper (Ref 2) (low energy consumption from the mains), and which permits, with the help of its ten channels, a simultaneous observation of 10 points of the medium under investigation. Figure 1 shows the block diagram, figure 2 the voltage diagram and figure 3 the principal circuit diagram of the seismoscope. The mode of operation in the block diagram and the individual blocks is described. The pulse generator has two outputs supplying pulses with a phase shift of 180°. Thus, a normal effect will be secured between the multiway and the rest of the circuit. This means that at the moment when the voltage wave coming from the emission crystal reaches the receiver crystal the transients in the amplifier are already over and the latter is prepared to receive these oscillations. Experimental seis-

Card 1/2

mograms were recorded and the following constants of the apparatus were found: amplification coefficient of the receiver amplifier $k = 1.5.10^6$ band width of the receiver amplifier $\Delta f = (5^2.10 - 1.10^6$ cycles. The pulse exciting the crystal emitter has rectangular shape, the pulse amplitude of voltage is equal to $U = 2.0.10^3$ v taking into account the bypassing of the crystal emitter. Pulse width may be changed within the limits of $\tau = (5\text{-}20)\mu$sec; the scanning time of the primary tube $T_{max} = 3000\mu$sec and T_{min} 20μsec and the reciprocal scanning velocity 120 and 0.8μsec. The second tube has the same parameters; it was possible to vary the pulse frequency within the limits of 5 and 50 cycles; the time marks are spike pulses with a division into 5 or 10μsec. Every tenth pulse was amplified. Figure 4 shows the seismogram of a metallic plate. The seismoscope described may be used for far larger bases of the medium to be investigated than has hitherto been possible by [illegible] **devices available** owing to the high amplification coefficients of the receiver amplifier and to the increased indices of the pulses delivered. There are 4 figures and 4 Soviet references.

SUBMITTED: November 2, 1958

Card 2/2

AVERKO, Ye.M.

Ten-channel seismoscope. Vest.LGU 14 no.16:134-140 '59.
(MIRA 12:10)

(Seismometers)

AVERKO, Ye.M.

Graphic analysis and synthesis of seismic oscillations. Geol.i geofiz. no.1:88-99 '62. (MIRA 15:4)

1. Institut geologii i geofiziki Sibirskogo otdeleniya AN SSSR, Novosibirsk.
(Seismology--Graphic methods)

AVERKO, Ye.M.

Experimental determination of a wave front. Frequency analyzer.
Geol. i geofiz. no.3:102-108 '62. (MIRA 15:7)

1. Institut geologii i geofiziki Sibirskogo otdeleniya AN SSSR, Novosibirsk.
(Oscillator, Electron tube) (Seismic waves)

AVIRKO, Yo. M.

Method of nonsteady calibration of piezoelectric converters for purposes of seismic modeling. Geol. i geofiz. no.8:86-95 '62. (MIRA 15:10)

1. Institut geologii i geofiziki Sibirskogo otdeleniya AN SSSR, Novosibirsk.
(Seismology—Electric equipment)

S/169/63/000/002/050/127
D263/D307

AUTHOR: Averko, Ye. M.

TITLE: Experimental determination of wave front. Frequency analyzer

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 2, 1963, 7, abstract 2G33 (Geologiya i geofizika, 1962, no. 3, 102-108)

TEXT: An experimental study was carried out on the front and form of waves excited in a liquid medium by a piezoelectric emitter. An ultrasonic seismoscope was used, whose circuit was modified so that it could also be used as a frequency analyzer of the eigenfunction of the vibrations in the system 'emitter-medium-receiving channel of the seismoscope'. Rectangular pulses modulated with a frequency ω are passed through the emitting crystal, which excites elastic vibrations in the medium. The signals are picked up by piezoreceivers, amplified by the receiving channel of the seismoscope, and are then fed to vertical C.R.T. plates with a driven

Card 1/3

sweep. Length of the input impulse is selected to give a semi-stationary regime. Amplitude of the vibrations is measured on the flat portion of the envelope of the pulse received in the seismoscope, and corresponds to the modulus of the required spectrum for frequency ω. A second C.F.T. is used to determine phases of the spectrum; the modulated signal which passes through the medium is fed on to vertical plates, and the voltage of frequency ω on to horizontal plates. Using the interference figures method it is possible to determine phase shift as a function of the modulating frequency. The error in the determination of the phase spectrum is 5 - 10%, and that for the amplitude spectrum is 5%. A surface of equal phase - the isochrone - has been taken, in the present work, as the wave front. As an example, the author determined the isochrone in water for an emitter (main frequency 70 kc/s) generally employed in seismic modeling. The receiver was accurate and nondirectional. The results indicate that the isochrones are not spherical and that the straight lines coming from the center of the diaphragm cannot be regarded as rays. The true direction of the rays may be determined by taking into account their perpendicula-

Card 2/3

rity to the wave front (isochrone). Neglect of this factor may lead to an error of up to 10 μsec in the determination of the time of wave propagation in water, when using a unit of the given size. Study of the frequency spectra shows a fundamental dependence of the form of the impulse on the ray considered. No evidence was found for any change in impulse form at various distances along the ray. [Abstracter's note: Complete translation.]

Card 3/3

AVERKO, Ye.M.; TELEZHENKO, V.P.

Similitude theory of elastic wave phenomena. Geol. i geofiz. no.11: 124-125 '62. (MIRA 16:3)

1. Institut geologii i geofiziki Sibirskogo otdeleniya AN SSSR, Novosibirsk.

(Elastic waves)

L 44305-66 EWT(1) GD/GW

ACC NR: AT6005067 (N) SOURCE CODE: UR/0000/65/000/000/0228/0241

AUTHOR: Averko, Ye. M.

ORG: none

27

B+1

TITLE: Methods and some results of seismic modeling

SOURCE: AN SSSR. Sibirskoye otdeleniye. Institut geologii i geofiziki. Metodika seysmorazvedki (Methods of seismic prospecting). Moscow, Izd-vo Nauka, 1965, 228-241

TOPIC TAGS: seismic modeling, seismic prospecting, seismoscope, signal phase distortion, piezoelectric converter / ENO-1 oscillograph

ABSTRACT: The frequency theory of continuous groups is used in estimating the phase distortions of signals which occur during seismic modeling and are associated with the distribution of the piezoelectric converters used. The models were either a cube of Rochelle salt (45° section) or a three dimensional model employing a piezoelectric receiver in the form of a two-dimensional plate, with the working surface coinciding with the edge of the plate. Several conditions are presented and analyzed in which the error in measuring the visible periods may amount to several tens of a percent. Methods of reception are proposed which will make it possible to eliminate phase distortions.

Card 1/2

L 44395-66

ACC NR: AT6005067

A check is made of the reasonableness of the phase correlation principle, primarily for a wave reflected beyond the critical angle and whose form varies with the angle of incidence. The results obtained by the author generally agreed with calculations derived theoretically indicating that in seismic prospecting the error which would occur in measuring the time of arrival of a wave reflected from a steep interface would not exceed 1/10 of the visible period (about 2 msec at 50 cps). A seismoscope is described which can be quickly assembled in most Soviet laboratories. The instrument can be used in seismic modeling experiments in which it is not necessary that the kinematic and dynamic parameters of the waves be measured with high precision. The basic element of this seismoscope is the ENO-1 oscillograph. The author notes that the error in measuring the kinematic characteristics of waves with this instrument is somewhat higher than with larger and more sophisticated instruments. Orig. art. has: 13 figures, 15 formulas, and 2 tables. [ER]

SUB CODE: 08/ SUBM DATE: 30Sep65/ ORIG REF: 010

Card 2/2

AVERKO-ANTONOVICH, I.N.

Ca

The interaction between barium sulfate and calcium chloride at high temperature I. N. Averko-Antonovich, *Trans. Kirov Inst. Chem. Tech. Kazan* No. 7, 3 (1938). The formation of $BaCl_2$ was observed in the reaction between $BaSO_4$ and $CaCl_2$ in molten state at about 8[illegible] for 3-4 hrs. The yield was 81.52-83.[illegible]% when an excess (0.34 equiv.) of $CaCl_2$ was used. $BaCl_2$ was completely washed out of the resulting fused mass with hot water. An increased amt. of water dissolved $CaSO_4$ and, in mixing with the main filtrate, caused a reversible reaction.

A. A. Podgorny

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

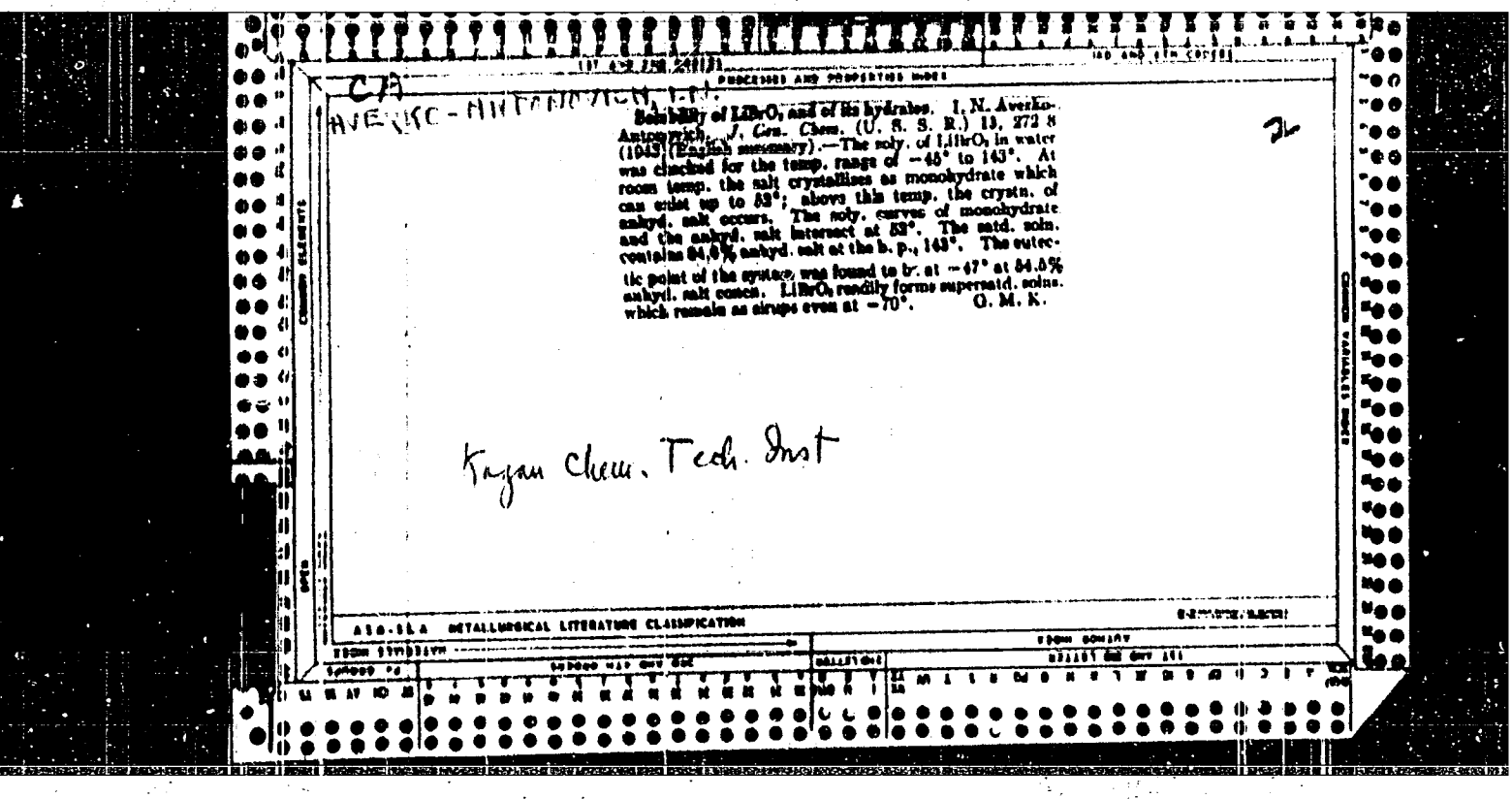
AVERKO-ANTONOVICH, I. N.

Properties and dihydrate of lithium bromate. I. N. Averko-Antonovitsch (*J. Gen. Chem. Russ.*, 1943, **13**, 267–270).—ρ and η of aq. solutions containing 10–52% of $LiBrO_3$ (I) are given. at 0°, the saturated solution contains 41·2% and at 50° 64·5% of (I). At room temp., (I) readily forms supersaturated solutions from which the metastable phase anhyd. (II) separates; it forms pyramidal crystals consisting of fine aggregates in which the crystallites are short prisms with high n, strong double refraction, and straight extinction. $LiBrO_3.H_2O$ (II) separates from almost saturated solutions after seeding, in long thin rhomboidal plates having similar optical properties to (I); at 110°, (II) loses H_2O without melting. The *dihydrate*, $LiBrO_3.2H_2O$ (III), was isolated from the crystals deposited at −−50° from a solution saturated at room temp. (III) forms short or flat prisms with optical properties similar to (I), melts in its H_2O of crystallisation at 60 – 70° and loses all H_2O at 110°. This observation provides some evidence that, near the eutectic point (−47°), (I) crystallises as (III)

AVERKO-ANTONOVITCH, I. N.

"Solubility of Lithium Bromate and of Its Hydrates. Part II." Averko-Antonovitch, I. N. (p. 270)

SO: Journal of General Chemistry (Zhurnal Obshchei Khimii) 1943, Volume 13, no. 4-5.



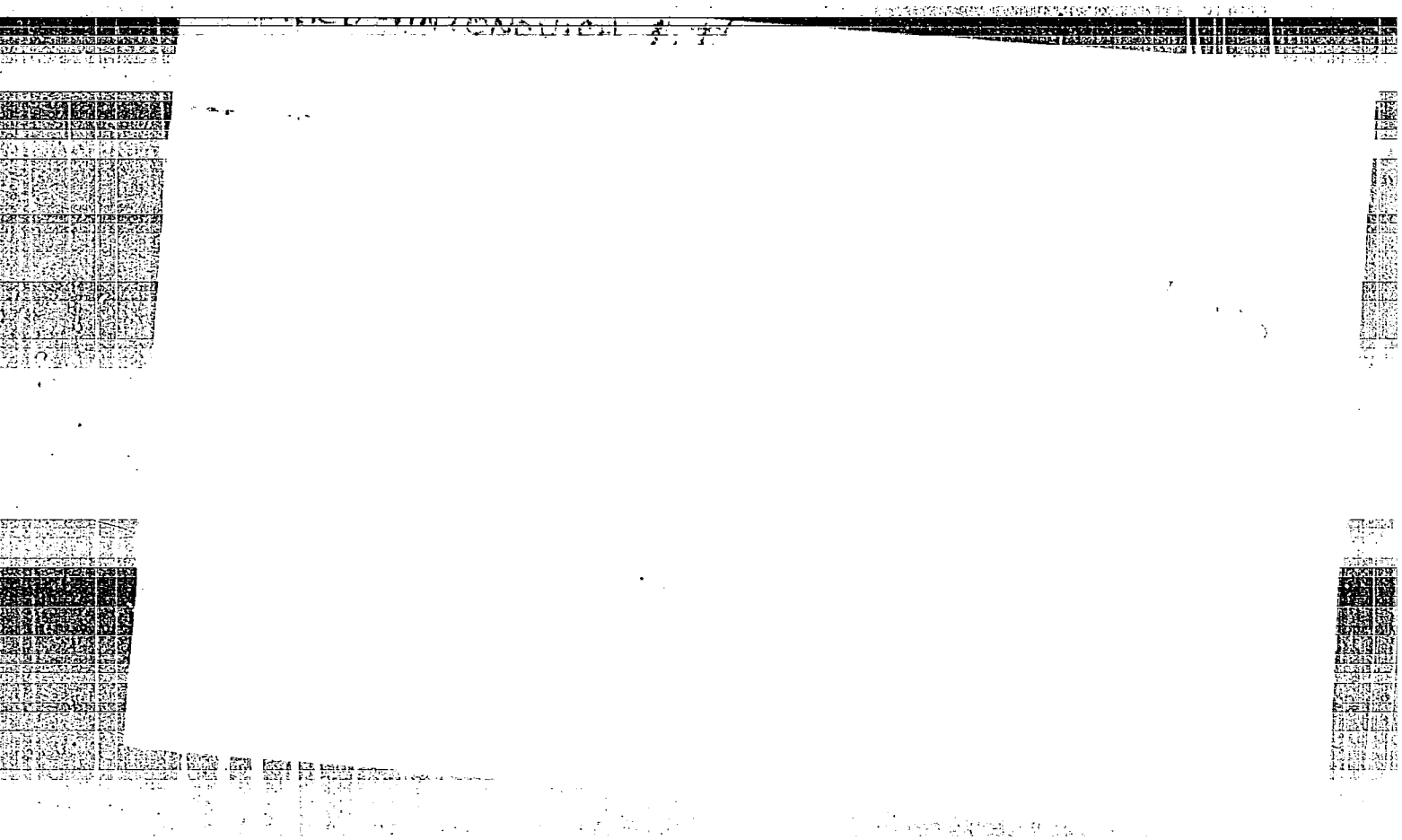
Solubility of $LiBrO_3$ and of its hydrates. I. N. Averko-Antonovich. *J. Gen. Chem.* (U. S. S. R.) 13, 272-8 (1943) (English summary).—The soly. of $LiBrO_3$ in water was checked for the temp. range of −45° to 143°. At room temp. the salt crystallizes as monohydrate which can exist up to 52°; above this temp. the crystn. of anhyd. salt occurs. The soly. curves of monohydrate and the anhyd. salt intersect at 52°. The satd. soln. contains 84.6% anhyd. salt at the b. p., 143°. The eutectic point of the system was found to be at −47° at 84.5% anhyd. salt concn. $LiBrO_3$ readily forms supersatd. solns. which remain as syrups even at −70°. O. M. K.

Kazan Chem. Tech. Inst

AVERKO-ANTONOVICH, I.N. (g. Kazan')

Oxidation of iron in open air and in a closed vessel. Khim. v shkole no. 3:59-60 My-Je '53. (MLRA 6:7)

(Oxidation) (Iron)



APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102610006-5"

24(7)

AUTHORS: Berg, L. G., Averko-Antonovich, I. N.

TITLE: On the Nature of Luminescence of Marble (O prirode svetimosti mramora)

SOV/20-126-1-21/62

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 126, Nr 1, pp 81-82 (USSR)

ABSTRACT: Technical publications have long contained descriptions (Ref 1) on the luminescence of some substances (diamond, marble, phosphorite, fluorite) at low heating. This phenomenon was termed "thermoluminescence". According to modern opinions, thermoluminescence can be explained as follows: In the absorption of sufficiently short-waved light in non-conducting substances, electrons are torn off from atoms (ionization). The torn-off ions can then accumulate near any defects in the crystal lattice, the energy state of these electrons remaining higher than normal. For the liberation of electrons from these spots, a certain energy is required which can be derived from the heat energy of the body at an increase in temperature. The authors observed a rather bright luminescence when natural marble was heated to ~180 - 200°C, and they also investigated

Card 1/4

On the Nature of Luminescence of Marble

SOV/20-126-1-21/62

some properties of the marble samples before and after luminescence. The results found can hardly be agreed with the above-mentioned explanation of luminescence. Subsequently, the authors put forward the results of some properties of marble before and after luminescence, and they also give a new explanation for the causes of this luminescence. The investigations were carried out on various samples of coarsely crystalline to nearly microcrystalline marble of Soviet and foreign origin (e.g. Carrara, Italy). All samples were capable of luminescing, but with different intensities. Even some kinds of dense limestone are luminescent, but much more weakly. Also other forms of natural calcium carbonate were investigated for a possible capability of luminescing, namely aragonite and calcite stalactites. No luminescence was observed on them. Most luminescent are samples of coarsely crystalline marble. The duration of luminescence depends on the size of the piece, and lasts, at 160 - 200°, half an hour or longer. A figure adjoining shows a luminescent marble sample. Thermograms and roentgenograms of marble were also recorded. The authors also investigated the changes in volume occurring during luminescence, and also the mechanical breaking strength before and after

Card 2/4

luminescence. No thermal effect was observed during luminescence. The lines on the roentgenograms of the marble samples slightly differ before and after luminescence. Before luminescence they are blurred, afterwards they are more distinctly outlined. The volume of the marble samples increased by 0.5% after luminescence. The strength of the samples decreased very much after luminescence. The results of the investigations discussed cannot be explained by thermo-luminescence. The authors consider other causes possible: marble - being a metamorphic rock - is formed under the influence of strong pressure, and perhaps of an increased temperature, which must necessarily influence the crystal structure of the calcium carbonate, namely by deformation, and perhaps even by a reduction in volume. In heating,

On the Nature of Luminescence of Marble SOV/20-126-1-21/62

the calcite might return to its normal crystal structure. Extinguished marble samples can no longer be made shining by the influence of rays. There are 1 figure and 3 references, 2 of which are Soviet.

ASSOCIATION: Kazanskiy gosudarstvennyy universitet im. V. I. Ul'yanova-Lenina (Kazan' State University imeni V. I. Ul'yanov-Lenin)

PRESENTED: November 19, 1958, by A. Ye. Arbuzov, Academician

SUBMITTED: November 12, 1958

Card 4/4

BERG, L.G.; GROMAKOV, S.D.; ZOROATSKAYA, I.V.; AVERKO-ANTONOVICH, I.N.

[Methods for selecting coefficients in chemical equations] Sposoby podbora koeffitsientov v khimicheskikh uravneniiakh. Kazan', Izd-vo Kazanskogo univ., 1959. 147 p. (MIRA 14:10)
(Chemical equations)

AVERKO-ANTONOVICH, I.N.; SUKHAREVA, V.I.

Solubility of Li_2CO_3 in solutions of LiCl at 0 - 100°C. Zhur. neorg.khim. 7 no.6:1478-1479 Je '62. (MIRA 15:6)

1. Kazanskiy gosudarstvennyy universitet, kafedra neorganicheskoy khimii.

(Lithium compounds) (Solubility)

EWT(m)/EWP(j) IJP(c) RM/JGP

ACC NR: AR6019466 (A) SOURCE CODE: UR/0081/66/000/002/S083/S084

AUTHOR: Ayorko-Antonovich, Yu. O.; Kirpichnikov, P. A.

TITLE: Polyurethane elastomers vulcanized with sulfur 15 45 13

SOURCE: Ref zh. khim, Part II, Abs. 2S639

REF SOURCE: Tr. Kazansk. khim.-tekhnol. in-ta, vyp. 33, 1964, 249-253

TOPIC TAGS: polyurethane, vulcanization, glycol, sulfur, mechanical property, elastomer

ABSTRACT: SKU elastomers which can be vulcanized with sulfur were prepared using 1-alloxypropanediol-2,3 (I) and 1-butenediol-3,4 (II) as unsaturated glycols; these were introduced into the initial diol mixture in amounts of 4-5 mol % in the synthesis of linear mixed polyethers. SKU elastomers were obtained by heating polyether and 2,4-toluylene diisocyanate (III) mixtures for 0.75-3.5 hours at 120° with up to 10-25% excess III. Milled mixtures were vulcanized in a press for 60 minutes at 134° and 150-180 kg/cm^2 pressure. Reducing the amount of I to 4 mol % in the diol mixture does not impair physical-mechanical properties of the vulcanizates; the amount of III may be reduced to 10 mol %. In using II, 4 mol % is sufficient for effective sulfur

Card 1/2

AVERKO-ANTONOVICH, L.A.; KIRPICHNIKOV, P.A.; ZARETSKIY, Ya.S.; FRIDLAND, V.M.; PROKHOROV, V.S.; RASPOPOVA, L.V.; Prinimala uchastiye: ZUBKOVA, T.P.

Production of colored thiokol sealing materials. Kauch. i rez. 24 no.9:20-23 '65. (MIRA 18:10)

1. Kazanskiy khimiko-tekhnologicheskiy institut imeni S.M.Kirova.

L 11812-66 EWT(m)/EWP(j)/T RPL WW/JWD/RM

ACC NR: AP6001092 SOURCE CODE: UR/0138/65/000/012/0010/0012

AUTHOR: Averko-Antonovich, Yu. O.; Kirpichnikov, P. A.

ORG: Kazan Chemical Engineering Institute im. S. M. Kirov (Kazanskiy khimiko-tekhnologicheskiy institut)

TITLE: Urethane rubbers based on cross-linked polyesters and vulcanizable by sulfur

SOURCE: Kauchuk i rezina, no. 12, 1965, 10-12

TOPIC TAGS: synthetic rubber, vulcanization, organic isocyanate compound, sulfur

ABSTRACT: Urethane rubbers vulcanizable by sulfur were obtained in two ways: (1) by using polyesters (linear or partially cross-linked by glycerin) of adipic acid, diethylene glycol, and 1-butene-3,4-dione, and (2) by joint curing of a mixture of saturated linear or cross-linked polyester and 1-butene-3,4-diol by 2,4-tolylene diisocyanate. As the degree of cross-linking of the polyester increases, the amount of diisocyanate necessary for obtaining rubbers with high physicomechanical characteristics decreases. The best properties are displayed by sulfur vulcanizates prepared from polyesters containing 1.0 mole % glycerin. Although an increase in cross-linking (up to 1.5 mole % glycerin) permits an improvement of the properties in some cases, the rubbers obtained are not sufficiently plastic. Orig. art. has: 1 figure and 4 tables.

SUB CODE: 11, 13 / SUBM DATE: none / ORIG REF: 005 / OTH REF: 008

Card 1/1 UDC: 678.664:546/547.07:678.028:678.043

AVERKOV, S. I.

USSR/Meters, Wave
Radio waves - UHF

Feb 1947

"Certain Instruments for Measurements in the Range of Centimeter Waves," M. T. Grekhova, S. I. Averkov, D. I. Grigorash, V. I. Anikin, 12 pp

"Izv Ak Nauk Fiz" Vol XI, No 2

Description of a receiver-wavemeter with auto-modulation, a wavemeter with an electron-ray indicator, an instrument for measuring voltage, and an instrument for measuring field intensity, all suitable for work in the range of centimeter waves.

87110

AVERKOV, S.I.

USSR / Radiophysics. Radiation of Radio Waves. Transmission Lines and Antennas. I-4

Abs Jour : Ref Zhur - Fizika, No 5, 1957, No 12475

Author : Averkov, S.I., Ryadov, V.Ya.

Inst : Not given

Title : Propagation of a Modulated Wave in a Medium with a Strongly Pronounced Dispersion.

Orig Pub : Radiotekhn. i elektronika, 1956, 1, 6, 739-742

Abstract : In the propagation of a tri-harmonic wave in a medium with dispersion, there takes place a periodic alternation of amplitude and frequency modulation (Referat Zhurnal - Fizika, 1956, No 8345). The results of an experimental investigation of this phenomena are illustrated

Card : 1/2

USSR / Radiophysics. Radiation of Radio Waves. Transmission Lines and Antennas. I-4

Abs Jour : Ref Zhur - Fizika, No 5, 1957, No 12475

Author : Averkov, S.I., Ryadov, V.Ya.

Abstract : by means of an example of an electromagnetic wave, propagating in a waveguide (λ_{cr} = 4.6 cm). The experiment consisted of a measurement of the spatial period of transformation starting with the fact that, at a given waveguide length, by changing the modulation frequency it is possible, in principle, to transform the frequency modulation entirely into amplitude modulation. The satisfactory agreement between the theory and the measurement results is noted.

Card : 2/2

AVERKOV, S. I., ANIKIN, V. I., BRAVO-ZHIVOTOVSKIY, D. M., GAPONOV, A. V., GREKHOVA, M. T., YERGAKOV, V. S., LOPYREV, V. A., MILLER, M. A., and FLYAZIN, V. A.

"A Diode Noise Generator in the Three-Centimeter Range," by S. I. Averkov, V. I. Anikin, D. M. Bravo-Zhivotovskiy, A. V. Gaponov, M. T. Grekhova, V. S. Yergakov, V. A. Lopyrev, M. A. Miller, and V. A. Flyazin, Radiotekhnika i Elektronika, No 6, Jun 56, pp 758-771

The operation of a test noise generator of the 3-centimeter range which utilizes the shot effect of a concentric diode as a noise source is described.

Increased effectiveness in the generator diodes was obtained by switching it to the high-resistance slot line containing one of the arms of the wave-guide slot T-joint.

Matching in the direction of the generator was accomplished by two different methods: the absorber was introduced into the wave-guide arm which is opposite the output, and the absorber was replaced by a short-circuited loop.

It was observed that matching took place only by the absorption of energy in the generator proper. In both cases, the zone of matching and emission were evaluated in the article as well as the value of the spectral noise power. The spectral noise power was linearly regulated by varying the plate current.

While operating from 450--600 kT_0, the current attained a value of 15 ma. (T_0 equals 300 degrees K and k = Boltzmann's constant.)

Jun 1958

Aver Averkov, S.I.

USSR/Radiophysics - Superhigh Frequencies, I-11

Abst Journal: Referat Zhur - Fizika, No 12, 1956, 35406

Author: Averkov, S. I., Karamina, I. N.

Institution: None

Title: On the Accuracy of Bolometric Measurements of the Power of an Absorbing Film in a Waveguide

Original Periodical: Uch. zap. Gor'kovsk. un-ta., 1956, 30, 76-82

Abstract: A solution of the thermal problem for the case of an absorbing homogeneous semiconducting film, located across a rectangular waveguide. The film is placed at such a distance from the short-circuited end of the waveguide, at which all the incident power is absorbed by the film. It is assumed that the resistance of the film has a linear dependence on the temperature, that the thickness of the film is small compared with other linear dimensions, and that the heat is liberated only on the wide sides of the film. The solution of the Poisson equation under these assumptions and for the

Card 1/2

AVERKOV, S.I.; OSTROVSKIY, L.A.

Propagation of oscillations in systems having time-depending parameters. Izv.vys.uchob.zav.; radiofiz. 1 no.4:46-51 '58. (MIRA 12:5)

1. Issledovatel'skiy radiofizicheskiy institut pri Gor'kovskom universitete.

(Radio waves)