68334

5.1310

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S/076/60/034/01/003/044
B010/B014

AUTHORS: Manzheley, M. Ye., Voytenko, L. V.

TITLE: Electroreduction of Acrylic Acid

PERIODICAL: Zhurnal fizicheskoy khimii, 1960, Vol 34, Nr 1, pp 27 - 31 (USSR)

ABSTRACT: Electroreduction of acrylic acid on cathodes of pure platinized platinum as well as on a gradually thicker deposition of mercury on the cathode was investigated in the present paper. The cathode potential (with Luggin's capillary) was measured with increasing polarizing current and simultaneously the volume of the hydrogen formed. Besides, charge curves were drawn (Refs 3 and 4), and hydrogenation was observed in the adsorbed hydrogen layer (Ref 5). The electrode production, the drawing of charge curves, and the calculation of the actual surface were carried out by a method elaborated by A. I. Shlygin and A. N. Frumkin. 0.1 N H_2SO_4 solution purified by means of electrolysis was used as an electrolyte. Figure 1 shows the results of hydrogenation in the adsorbed hydrogen layer. Hence it may be seen that acrylic acid reacts with the adsorbed hydrogen both on pure platinized platinum and on platinum partly covered with

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mercury. In the latter case the reaction is slower (Fig 2 and Table). If about 35% of the electrode surface is covered with mercury, the electroreduction ceases. As may be seen from the charge curves, the ability of the electrode to adsorb hydrogen changes consequently. In the case of a thicker deposition of mercury on the electrode (up to 200%, 400%) it acts like a mercury electrode (Fig 3). It was found that electroreduction may take place both on platinized platinum and on mercury, however, only with potentials which differ by more than 1 v. Further experiments with addition of atomic arsenic obtained by reduction of $HAsO_2$ furnished the following results: Admixtures of arsenic caused a considerable deceleration of the reduction process on the platinized platinum cathode. With a 2% deposition the electrode was completely poisoned. On the basis of experimental data and considering data of publications the following mechanism of electroreduction of α, β-unsaturated acids may be assumed: On a cathode of platinized platinum, reduction is brought about by adsorbed hydrogen atoms under the catalytic action of the cathode surface on the adsorbed acrylic acid molecules. On a mercury cathode, reduction may take place due

Electroreduction of Acrylic Acid

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to a direct addition of cathode electrons to the strongly polarized molecule, in which the β-carbon atom may be an electron acceptor. A reduction scheme is suggested. E. Razumovskaya, K. I. Rozental', and Z. A. Iofa are mentioned in this paper. There are 3 figures, 1 table, and 13 references, 12 of which are Soviet.

ASSOCIATION: Kishinevskiy gosudarstvennyy universitet (Kishinev State University)

SUBMITTED: March 17, 1958

Card 3/3

MANZHELEY, M.Ye.; SHOLIN, A.F.

Electrochemical hydrogenation of allyl alcohol. Dokl. AN SSSR 141 no.4:897-899 D '61. (MIRA 14:11)

1. Kishinevskiy gosudarstvennyy universitet. Predstavleno akademikom A.A. Balandinym.

(Allyl alcohol) (Hydrogenation) (Electrochemistry)

L 18309-63 EWP(q)/EWT(m)/BDS AFFTC/ASD/ESD-3 RM/RH/JD

ACCESSION NR: AP3004978 S/0076/63/037/008/1825/1831 64 63

AUTHORS: Manzheley, M. Ye.; Sholin, A. F.

TITLE: Electroreduction of unsaturated compounds on a platinized platinum cathode

SOURCE: Zhurnal fiz. khimii, v. 37, no. 8, 1963, 1825-1831.

TOPIC TAGS: electroreduction, unsaturated compound, platinized platinum, allyl alcohol, Hg, As, I, Tl, NaOH.

ABSTRACT: The electroreduction of allyl alcohol on a platinized platinum cathode with clean surface and with additions of Hg, As, I^- and Tl^+ has been investigated by plotting the polarization curves Phi-log i, measuring the absorption of hydrogen (charging curves) and of allyl alcohol and carrying out the hydrogenation reaction in a layer of adsorbed hydrogen. It has been found that, in both an acid (0, 1N H_2SO_4) as well as in an alkaline (NaCH) medium, the electroreduction begins at a potential zone more positive than the reversible hydrogen electrode potential. A considerable difference between the two media has also been revealed, with progressive reduction products such as C_3H_6, C_3H_8 and small amounts of the hydrogenolysis products CH_4, C_2H_4 and C_2H_6 being formed in the acid medium. Reduction is retarded and then completely inhibited in the zone of hydrogen

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L 18309-63
ACCESSION NR: AP3004978

overvoltage. The use of addition agents made it possible to establish the catalytic character of the electroreduction process and its dependence upon the presence of adsorbed hydrogen on the electrode surface as well as upon the energy of the hydrogen-platinum bond. Orig. art. has: 4 figures, 1 table.

ASSOCIATION: Kishinevskiy gosudarstvenny*y universitet (Kishinev state university).

SUBMITTED: 05Oct61 DATE ACQ: 06Sep63 ENCL: 00

SUB CODE: CH NO REF SOV: 007 OTHER: 004

Card 2/2

MANZHELEY, M.Ye.

Effect of the nature of the substituent on the kinetics of nitrobenzene electroreduction. Zhur.fiz.khim. 36 no.10: 2113-2117 O '62. (MIRA 17:4)

1. Kishinevskiy gosudarstvennyy universitet.

MANZHELEY, M.Ye.

Mercury electrode. Uch.zap.Kish.un. 68:41-44 '63 [cover '64].
(MIRA 18:12)

NOVIKOV, B.G.; MANZHELEY, V.U.

Development and growth of ducks reared at different seasons of the year. Trudy Inst.zool.AN URSR 12:54-67 '55. (MLRA 9:7)
(Ducks)

NOVIKOV, B.G. [Novykov, B.H.]; MANZHELEY, V.U.

Biological foundations of year-round raising of waterfowl. Visnyk Kyiv.un. no.5. Ser.biol. no.2:91-97 '62. (MIRA 16:5)
(GEESE) (DUCKS)

MANZHELIY, I. I.

USSR/Agriculture

Card 1/1

Author : Manzheliy, I. I., Cand. in Agricultural Sciences

Title : About agriculture booklets of the "Znanie" Publishing Office

Periodical : Nauka i Zhizn' 21/3, 46-47, Mar/1954

Abstract : The author comments on the importance of spreading scientific knowledge in accordance with orders of the Communist Party and the Government. The reader demands from agricultural books information that will solve the problems that confront him in his work. The editions put out by "Znanie" are taken up separately and commented on. He finds some things to criticize.

Institution : .....

Submitted : .....

Manzheliy, I.I.

Category: USSR/General Division. Congresses. Meetings. Conferences. A-4

Abs Jour: Referat Zh.-Biol., No 6, 25 March 1957, 21365

Author : Manzheliy, I.I.
Inst : not given
Title : The December Session of the Academy [V.I. Lenin Agricultural Sciences].

Orig Pub: Agrobiologiya, 1955, No 1, 150-153

Abstract: The session, held from the 6th to the 13th of October 1954, examined the accomplishments of scientific-experimental work for 1954 and thematic plans for 1955 of the institutes included in the academy system, and the Kazakh affiliate of the academy.

Card : 1/1 -19-

MANZHELIY, I. I

USSR / Cultivated Plants. Cereals. M

Abs Jour : Ref Zhur - Biol., No 8, 1958, No 34611

Author : Manzheliy, I. I.
Inst : None
Title : Large-Ear, Lo[illegible]esistant Varieties of Winter Wheat.

Orig Pub : Vestn. s. kh. nauki, 1957, No 3, 118-121.

Abstract : Work done between 1950 and 1956 led to the development of short-stem, large-ear winter wheat, lo[illegible]-resistant in large harvest years, by means of selection and by raising plants under conditions, prevalent in the Moscow Oblast, from samples of winter wheat varieties received in 1949 from the German Democratic Republic, where they have been chosen by the scientist Dr. Riebisel. A description is given of 6 samples with a positive rating. -- Yu. L. Gushev.

Card 1/1

MANZHELIY, I.I., kand.sel'skokhoz.nauk, red.; BLOKHINA, V.V., red.; PECHENKIN, I.V., tekhn.red.

[Monospermous sugar beet] Odnosemiannaia sakharnaia svekla; sbornik statei. Pod red. I.I.Manzheliia. Moskva, Izd-vo M-va sel'. khoz. SSSR, 1960. 183 p. (MIRA 13:12)

1. Russia (1923- U.S.S.R.) Glavnaya inspektsiya po zemledeliyu. 2. Uchenyy sekretar' otdeleniya zemledeliya Vsesoyuznoy akademii sel'skokhozyaystvennykh nauk imeni V.I.Lenina (for Manzheliy).
(Sugar beets)

MANZHELIY, I.I., kand.sel'skokhozyaystvennykh nauk

Session of the Lenin All-Union Academy of Agricultural Sciences.
Zemledelie 8 no.10:90-91 O '60. (MIRA 13:10)
(Agricultural research)

SINYAGIN, I.I., akademik, red.; BUZANOV, I.F., akademik, laureat Leninskoy premii, red.; MAZLUMOV, A.L., akademik, red.; MAYSURYAN, N.A., akademik, red.; VASILENKO, P.M., akademik, red.; VASILENKO, P.M., akademik, red.; MANZHELIY, I.I., red.; GORELIK, L.Ya., red.; ANTONOVA, N.M., tekhn. red.

[Achievements of science and advanced practices in sugar beet growing] Dostizheniia nauki i peredovoi opyt po sveklovodstvu. Moskva, Sel'khozgiz, 1961. 403 p. (MIRA 15:2)

1. Vsesoyuznaya akademiya sel'skokhozyaystvennykh nauk imeni V.I.Lenina. 2. Uchenyy sekretar' sektsii tekhnicheskikh kul'tur Otdeleniya zemledeliya Vsesoyuznoy akademii sel'skokhozyaystvennykh nauk im. V.I.Lenina (for Manzheliy).
(Sugar beet breeding)

MANZHELIY, L. S.

The Second All-Union Conference on the Preparation and Analysis of High-Purity Elements, held on 24-28 December 1963 at Gorky State University im. N. I. Lobachevskiy, was sponsored by the Institute of Chemistry of the Gorky State University, the Physicochemical and Technological Department for Inorganic Materials of the Academy of Sciences USSR, and the Gorky Section of the All-Union Chemical Society im. D. I. Mendeleyev. The opening address was made by Academician N. M. Zhavoronkov. Some 90 papers were presented, among them the following:

V. A. Novoselov and T. K. Aydarov. Spectrochemical analysis for S, Se, Te, Sb in InAs.

L. M. Ivantsov. Possibilities of increasing sensitivity of emission spectroscopy.

A. M. Bulgakova, N. P. Zalyubovskaya, and L. S. Manzheliy. A high-sensitivity amperometric method for determining I, Mo, and Tu in LiF, CdS, NaI, CsI, and other single crystals.

(Zhur. Anal. Khim, 19 No. 6, 1964 p. 777-79)

MANZHELEY, M.Ye.

Temperature effect on the kinetics of electroreduction of unsaturated organic compounds. Zhur. fiz. khim. 36 no.9: 1958-1962 S '62. (MIRA 17:6)

1. Kishinevskiy gosudarstvennyy universitet, kafedra fizicheskoy khimii.

MANZHELEY, V G.

Distr: 4E4j

Investigation of diffusion in liquids by the method of saturation from the gaseous phase. I. N. Bagrov, D. G. Dolgopolov, and V. G. Manzheley (A. M. Gor'kii State Univ., Kharkov). Zhur. Fiz. Khimii 1956, No. 5, 89-93.—Described are the theory and the method of expt. detn. of diffusion of condensed vapor in liquid-phase systems with limitless mutual soly. and arbitrary vapor pressure of the components. The vapor pressure p of the component undergoing the diffusion process, and the wt. w of the liquid soln. during the diffusion at const. temp. are measured. The diffusion coeff. is derived on the basis of Henry's law. In equil. p and w are const. and independent of time at const. temp. Tests of the system benzene-octoil agreed with the theory. R. Ryshkevitch

SOV/58-59-8-17735

Translated from: Referativnyy Zhurnal Fizika, 1959, Nr 8, p 108 (USSR)

AUTHORS: Dolgopolov, D.G., Manzheley, V.G.

TITLE: The Determination of the Coefficient of Diffusion in Liquids by Means of the Volatile-Component Method

PERIODICAL: Uch. zap. Khar'kovsk. un-t, 1958, Vol 98, Tr. Fiz. otd. fiz.-matem. fak., pp 365-367

ABSTRACT: A method is proposed for measuring the coefficient of diffusion D in liquids during the evaporation of a dissolved substance. By means of this method, the D of benzene at 17.5°C in octoil (2.5% of benzene) was computed. Its value proved to be equal to $0.75 \cdot 10^{-6}$ $cm^2/sec.$, which agrees with an accuracy of about 3% with the D previously obtained by means of another method (RZhFiz, 1957, Nr 8, 19637). Since the convection which arises upon a variation in the density of the solution influences the accuracy of the measurement of D, a condition was found under which convection will be absent:

$$l^3 \delta g \Delta C / \gamma \; D \leq 1100,$$

where l is the height of the convection region, ΔC is the difference

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The Determination of the Coefficient of Diffusion in Liquids by Means of the Volatile-Component Method

in concentration, and ν is the viscosity. The proposed method for measuring D entails the danger that the solution may begin to boil. In the opinion of the authors, this danger can be avoided in the case of an arbitrary difference in pressures by admitting into the apparatus a vapor or gas which does not dissolve in the system under consideration, so that the total vapor pressure exceeds the pressure of the saturated vapor of the solution.

L.P. Kholpanov

5 (4)

AUTHORS: Manzheliy, V. G., Verkin, B. I. SOV/76-33-8-13/39

TITLE: Investigation of the Diffusion Phenomena in Liquefied Gases

PERIODICAL: Zhurnal fizicheskoy khimii, 1959, Vol 33, Nr 8, pp 1758 - 1761 (USSR)

ABSTRACT: An investigation method, as well as the corresponding apparatus, for the study of diffusion phenomena in liquefied gases at low temperatures were developed. The advantage of the method of the gaseous phase applied (Refs 1-4) in contrast with the capillary method (Ref 5) lies in the fact that the former permits the checking of the occurrence of a convection as well as the continuous recording of the diffusion coefficient as a function of the concentration. The system methane (I)-propylene(II) was investigated, since it possesses relatively simple molecules. The test arrangement (Fig 1) contains a copper flask (250 cm^3) in which the pressure can be measured by means of a manometer and read by means of a cathetometer. The flask is contained in a Dewar vessel. The dependence of the diffusion coefficient of (I) and (II) on the concentration in the range of 0 - 27.5 mol% at 90.2°K was examined, and the results obtained were indicated (Table). The aggregate error in the determinations is given as

Card 1/2

Investigation of the Diffusion Phenomena in Liquefied Gases SOV/76-33-8-13/39

amounting to 6% at most. The authors thank V. A. Pikovets, Ye. A. Sen'ko, and G. L. Shatrovskiy. There are 2 figures, 1 table, and 5 references, 4 of which are Soviet.

ASSOCIATION: Khar'kovskiy gosudarstvennyy universitet im. A. M. Gor'kogo (Khar'kov State University imeni A. M. Gor'kiy)

SUBMITTED: January 17, 1958

Card 2/2

MANZHELIY, V.G. [Manzhelii, V.H.]; TOLKACHEV, A.M.

Device for investigating the diffusion of weekly soluble gases in nonvolatile liquids. Ukr.fiz.zhur. 5 no.3:431-433 My-Je '60. (MIRA 13:7)

1. Khar'kovskiy gosudarstvennyy universitet.
(Diffusion)

MANZHELIY, V.G. [Manzhelii, V.H.]

Some peculiarities of diffusion in liquids with great molar volume.
Ukr. fiz. zhur. 5 no. 5:696-701 S-O '60. (MIRA 14:4)

1. Khar'kovskiy gosudarstvennyy universitet.
(Diffusion)

S/076/60/034/008/032/039/XX
B015/B063

AUTHOR: Manzheliy, V. G.

TITLE: Study of Diffusion in Some Organic Liquids With a Large Molar Volume

PERIODICAL: Zhurnal fizicheskoy khimii, 1960, Vol. 34, No. 8, pp. 1856-1861

TEXT: The diffusion theory (Ref. 1) of liquids is only valid if the diffusing molecules are much larger than those of the solvent, otherwise the effect of the solvent upon diffusion must not be neglected since it might lead to different rules. As these may be significant, the authors studied diffusion in organic liquids whose molar volume is larger than that of the diffusing substance. The method of the gaseous phase (Refs.2-4) was applied which, in principle, consists in bringing a certain quantity of the vapor of the diffusing substance into contact with the solvent and determining the diffusion coefficient from the variation of weight or vapor pressure in time, i.e., until equilibrium is reached. The validity of the Henry law is presupposed. A series of gravimetric experiments were

conducted at 20 ± 0.05°C (Refs. 3, 4), and the viscosity η of the solvent was simultaneously determined at 20°C by means of a capillary viscosimeter. The measurements included the diffusion of methyl formate, acetone, ethyl ether, ethyl acetate, etc., in tricresyl phosphate, dibutyl phthalate, diethyl phthalate, dimethyl phthalate, and oleic acid. The results indicate that the diffusion coefficient D is little dependent on the type of diffusing substance, but chiefly on the solvent properties. The value of $D \cdot \eta$ differs for the various solvents. If a mixture with a solvent having a small molar volume (of the order of magnitude of the diffusing substance) (resorcinol in the present case) is used instead of a solvent with a large molar volume, D will change with the diffusing substance (Table 2). On the basis of the hole theory of liquids formulated by Ya. I. Frenkel' in Ref. 5, it is shown that at low concentrations of the diffusing substance the energy of hole formation is a function of the solvent properties, that the activation energy drops with an increase of the holes, and that the D values of different substances are about the same in the same solvent. Resorcinol in the mixture apparently leads to a decrease of the mean hole dimensions and, thus, to an increase of the activation energy and a dependence of the D values on the type of diffusing molecule. The

Study of Diffusion in Some Organic Liquids With a Large Molar Volume

S/076/60/034/009/012/039/XX
B015/B063

change of η and D of the solvents with temperature shows that the activation energies of diffusion and viscous flow resemble each other, and the activation energy is thus apparently small as compared with the energy of hole formation. Professor B. I. Verkin and Docent D. G. Dolgopolov are thanked for suggestions, Docent Ya. Ye. Geguzin for a discussion, and G. L. Shatrovskiy for measurements. There are 4 figures, 2 tables, and 7 references: 6 Soviet and 1 US.

ASSOCIATION: Khar'kovskiy gosudarstvennyy universitet im. A. M. Gor'kogo (Khar'kov State University imeni A. M. Gor'kiy)

SUBMITTED: December 10, 1958

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S/076/60/034/008/032/039/XX
B015/B063

Таб. 2 Таблица 2

1 Диффундирующее вещество	2 Раствор	3 $\eta \cdot 10^2$ пуазы	4 $D \cdot 10^6 \frac{см^2}{сек}$
	а Трикрезилфосфат 40 мол. %		
5 Метилформиат ($C_2H_4O_2$)	б дибутилфталат 60 мол. %	31.3	
6 Ацетон (C_3H_6O)			1,78
7 Этиловый эфир ($C_4H_{10}O$)			1,79
			1,77
	в Резорцин 35 мол. %		
5 Метилформиат ($C_2H_4O_2$)	г дибутилфталат 65 мол. %	69,1	
6 Ацетон (C_3H_6O)			1,16
7 Этиловый эфир ($C_4H_{10}O$)			1,22
8 Этилацетат ($C_4H_8O_2$)			0,71
			0,96

Legend to Table 2: 1 = Diffusing substance; 2 = Solution; 3 = $\eta \cdot 10^2$ poises; 4 = $D \cdot 10^6 cm^2/sec$; 5 = Methyl formate; 6 = Acetone; 7 = Ethyl ether; 8 = Ethyl acetate; 9 = Tricresyl phosphate; 10 = Dibutyl phthalate; 11 = Resorcinol.

Card 4/4

MANZHELIY, V. G., Cand Phys-Math Sci, "Investigation of Diffusion in Liquids with High Molar Volume." Kiev, 1961. (Min of Higher and Sec Spec Ed UkSSR, Kiev Order of Lenin State Univ im T. G. Shevchenko). (KL, 3-61,204).

ACCESSION NR: AP4041734 S/0181/64/006/007/2194/2196

AUTHORS: Gavrilko, V. G.; Manzheliy, V. G.

TITLE: Density of crystalline xenon

SOURCE: Fizika tverdogo tela, v. 6, no. 7, 1964, 2194-2196

TOPIC TAGS: xenon, argon, density determination, thermal expansion coefficient, solid phase, melting point, crystalline phase

ABSTRACT: The density of solid xenon under equilibrium vapor tension was measured in the range 120--160K by a pycnometric method (V. G. Manzheliy and A. M. Tolkachev, FTT v. 5, 3413, 1963). The experimental error did not exceed 0.25%. The results agree well with data obtained below 120K by an x-ray method. Inasmuch as there were no published data on the density of liquid xenon at the triple point, the authors determined pycnometrically the density and the coefficient of thermal expansion of liquid xenon at 162K and obtained values

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ACCESSION NR: AP4041734

2.96_3 g/cm^3 and $(1.46 \pm 0.20) \times 10^{-3}$ deg^{-1}, respectively. These yielded for the jump in volume at the triple point a value V = 5.65 $\pm$ $\pm$ 0.20 cm^3/mole, which agrees well with the result calculated by the Clapeyron-Clausius formula. The authors also found that the density of crystalline argon at 77.4K is 1.64_8 g/cm^3, which agrees with data by others. The authors thank corresponding member of AN UkrSSR B. I. Verkin for valuable advice and also N. N. Grinchenko and V. I. Kuchnev for participating in the measurements." Orig. art. has: 1 figure, 1 formula, and 1 table:

ASSOCIATION: Fiziko-tekhnicheskiy institut nizkikh temperatur AN UkrSSR, Khar'kov (Physicotechnical Institute of Low Temperature, AN UkrSSR)

SUBMITTED: 13Feb64

ENCL: 01

SUB CODE: SS

NR REF SOV: 002

OTHER: 008

Card 2/3

L 3340-66 EWT(d)/EWT(l)/EWT(m)/EPF(c)/EEC(k)-2/EPF(n)-2/EWP(j)/T/EWP(t)/EWP(b)/ETC(m) IJP(c) JD/WW/RM

ACCESSION NR: AP5017308 UR/0181/65/007/007/2125/2128

AUTHORS: Tolkachev, A. M.; Manzheliy, V. G. 44,55

TITLE: Density of solidified gases 7 21,44,55

SOURCE: Fizika tverdogo tela, v. 7, no. 7, 1965, 2125-2128

TOPIC TAGS: solid physical property, gas density, nitrogen, oxygen, methane, ammonia

ABSTRACT: The method employed in this investigation for the determination of the density of solidified gases was described in detail earlier (FTT v. 5, 3413, 1963). The present article describes a new variant of pycnometer for use with this method. The pycnometer can be operated at a temperature other than that of liquified gas and its temperature can be maintained constant. The pycnometer is shown in Fig. 1 of the Enclosure. It was used to determine the densities of solid nitrogen (at 20.4, 50.8, and 62.2K), oxygen (52.2K), methane (20.4K), and ammonia (20.4K). The corresponding densities are 1.0253, 0.9677, 0.9456, 1.3625, 0.5225, and 0.8666, respectively. The

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55
49
B

L 3340-66
ACCESSION NR: AP5017308

authors thank Ye. I. Voytovich for participating in the measurements.
Orig. art. has: 1 figure and 1 table

ASSOCIATION: Fiziko-tekhnicheskiy institut nizkikh temperatur, Khar'kov (Physicotechnical Institute of Low Temperatures)

SUBMITTED: 08Feb65 ENCL: 01 SUB CODE: SS, ME

NR REF SOV: 001 OTHER: 019

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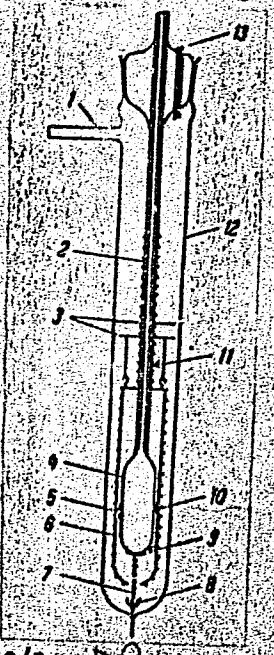
L 3340-66
ACC NR: AP5017308

ENCLOSURE: 01

Fig. 1. Scheme of low temperature device section for determination of the density of solidified gases.



1. outlet
2. capillary
3. screens
4. adiabetical screen
6. pycnometer
7. cooling duct
8. cooling duct cap
5, 9, 10, 11. thermocouples
12. housing
13. conductors outlets

Card 3/3 DP

KRUPSKIY, I.N., DOLGOPOLOV, D.G., MANZHELIY, V.G., KOZLOVA, I.A.

Determining the heat conductivity of paraffin at low temperatures.
Inzh.-fiz. zhur. 8 no.1:11-15 Ja '65. (MIRA 18:3)

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

ACC NR: AP6005439 SOURCE CODE: GE/0030/66/013/002/0351/0358

AUTHOR: Manzheliy, V. G.; Tolkachev, A. M.; Voytovich, Ye. I.

ORG: Institute of Low-temperature Physics and Technology AN UkrSSR, Kharkov (Fiziko-tekhnicheskiy institut nizkikh temperatur)

TITLE: Thermal expansion of crystalline nitrogen, oxygen, and methane

SOURCE: Physica status solidi, v. 13, no. 2, 1966, 351-358

TOPIC TAGS: nitrogen, oxygen, methane, crystal, thermal expansion

ABSTRACT: The experimental data obtained on the physical properties of crystals with simple molecular structure cannot often be properly interpreted because of the lack of data on thermal expansion of the crystals. The thermal expansion data are also important for verifying many conclusions based on the dynamic theory of a lattice. This paper deals with the linear coefficients of thermal expansion of crystallized solid nitrogen, oxygen, and methane for which the linear coefficients were measured in the temperature range 21 to 45K, 21 to 45K, and 21 to 60K, respectively. As in the first-order phase transformation temperatures are approached from the low-temperature phase side, the linear expansion coefficients exhibit an anomalously rapid increase. A possible explanation of these anomalies based on the idea of lattice orientation defects in molecular cytstals is given. The specific heat at constant volume and the Grueneisen coefficient for crystalline methane are calculated and a possible explanation of the low values for the Grueneisen co-

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L 21248-66

ACC NR: AP6005439 4

efficients is offered. The graphs of the temperature dependence of the linear expansion coefficient for crystalline nitrogen, oxygen, and methane are presented. Authors thank V. I. Peresada, B. Ya. Sukharevskiy, L. S. Kukushkin, and I. O. Kulik for valuable discussions. Orig. art. has: 5 figures, 1 table, and 3 formulas. [JKP]

SUB CODE: 20/ SUBM DATE: 11Nov65/ ORIG REF: 001/ OTH REF: 001/ SOV REF: 004/

Card 2/2 BLG

BEZUGLYY, P.A.; YEREMENKO, V.V.; KUKUSHKIN, L.S.; KULIK, I.O.; MANZHELIY, V.G.; PERESADA, V.I.; PESCHANSKIY, V.G.; POPOV, V.A.; SHISHKIN, L.A.

Conference on the physics of the condensed state. Usp. fiz. nauk 88 no.2:387-393 F '66. (MIRA 19:2)

1. Fiziko-tekhnicheskiy institut nizkikh temperatur AN UkrSSR.

L 22300-66 EWT(m)/EWP(t)/ETI IJP(c) JD/WW/JW

ACC NR: AP6012458 SOURCE CODE: UR/0181/66/008/004/1035/1039

AUTHORS: Manzheliy, V. G.; Tolkachev, A. M.

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

TITLE: Thermal expansion of crystalline ammonia

SOURCE: Fizika tverdogo tela, v. 8, no. 4, 1966, 1035-1039

TOPIC TAGS: ammonia, thermal expansion, low temperature research, specific heat, temperature dependence

ABSTRACT: The authors have determined the coefficient of linear expansion of crystalline ammonia in the temperature interval 24 -- 175K, using a specially designed quartz dilatometer (Fig. 1), whose low temperature part is constructed of transparent quartz in glass tc permit a visual observation of the crystallized gas. The procedure for maintaining the crystal temperature, measuring the temperature, and crystallizing the gas was described by the authors in an earlier paper (FTT v. 7, 2125, 1965). The coefficient of linear expansion exhibited nearly linear growth with rising temperature. The values of the specific heat at constant volume and of the Gruneisen coefficient calculated from the experimental data exhibited an unusual behavior, in that the curve of the

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L 29300-66

ACC NR: AP6012458

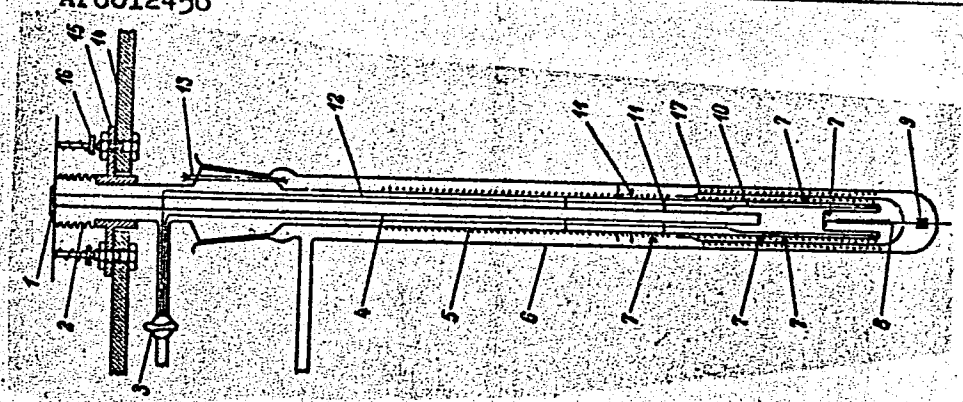

Fig. 1. Diagram of dilatometer. 1 -- Bearing platform, 2 -- bellows, 3 -- gate, 4 -- rod, 5 -- quartz ampoule, 6 -- inner ampoule, 7 -- thermocouples, 8 -- cold finger, 9 -- cup of cold finger, 10 -- glass cylinder, 11 -- screens, 12 -- filaments, 13 -- leads, 14 -- plate, 15 -- guiding bushing, 16 -- adjusting nuts, 17 -- adiabatic jacket.

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temperature dependence of the coefficient of linear expansion showed two points of inflection, and the Gruneisen coefficient exhibited a strong temperature dependence. This suggests the existence of a second mechanism, other than the lattice mechanism of thermal expansion. This additional mechanism is attributed to hindered rotation of the molecules and its effect on the thermal expansion of the crystal. In view of the low accuracy of the experiment, the agreement between the experimental and calculated values is regarded as good. The authors thank B. G. Udovidchenko for developing the small-displacement meter and Ye. I. Voytovich for help with the measurements. Orig. art. has: 2 figures, 3 formulas, and 1 table.

SUB CODE: 20/ SUBM DATE: 09Aug65/ ORIG REF: 003/ OTH REF: 001

MANZHERON, D. [Mangeron, D.]

Optimal functional equations of dynamic programming related to the new class of boundary value problems with "total derivatives". Soob. AN Gruz. SSR 33 no.3:521-528 Mr '64 (MIRA 17:8)

1. Rumynskaya Narodnaya Respublika, Yasskiy politekhnicheskiy institut. Predstavleno akademikom O.D. Oniashvili.

MANZHERON, D. I.

USSR/Engineering - Accelerations

Card 1/1 Pub. 22 - 13/53

Authors : Manzheron, D. I.

Title : Generalization of Somov's formulae of various orders of an acceleration

Periodical : Dok. AN SSSR 102/4, 705-706, Jun 1, 1955

Abstract : By using the matrix forms a generalization of Somov's vector method for the expression of various orders of an acceleration is outlined. Three USSR references (1948-1953).

Institution : Yasskiy Polytechnical Institute, Yassi, Rumania

Presented by: Academician A. I. Nekrasov, October 29, 1954

MANZHERON, D. I.

USSR/Physics - Kinematics

Card 1/1 Pub. 22 - 11/54

Authors : Manzheron, D. I.

Title : Regarding the grapho-analytical methods of kinematics of the material systems

Periodical : Dok. AN SSSR 102/5, 897-898, June 11, 1955

Abstract : A series of theorems are presented dealing with the n-th order accelerations of points of material non-changeable systems moving in 3-dimensional space. An application of these theorems to a flat parallel moving systems (of points), deforming during their movement but keeping up the similarity, is outlined. Two USSR references (1954-1955).

Institution : Yassi Polytechnical Institute, Yassi, Rumanian Peoples Republic

Presented by : Academician A. I. Nekrasov, January 11, 1955

MANZHERON, D.I.

SUBJECT USSR / PHYSICS CARD 1 / 2 PA - 1913
AUTHOR MANŽERON, D.I.
TITLE On the Reduced Accelerations of Any Order and on Some of their Extremum Properties.
PERIODICAL Dokl.Akad.Nauk, 112, fasc.1, 27-28 (1957)
Issued: 2 / 1957

Let it be assumed that $\vec{w}_M^{(n)}$ is the acceleration of the n-th order of the point M of a body which is in plane-parallel motion. This motion is expressed by the following generalized formulae by SOMOV:

$$\begin{Bmatrix} x_1^{(n+1)} \\ x_2^{(n+1)} \end{Bmatrix} = \begin{Bmatrix} x_{10}^{(n+1)} \\ x_{20}^{(n+1)} \end{Bmatrix} + \begin{pmatrix} -A_n & -B_n \\ B_n & -A_n \end{pmatrix} \begin{pmatrix} x_1 & -x_{10} \\ x_2 & -x_{20} \end{pmatrix}$$

Here $A = A_n(t)$ and $B = B_n(t)$ are determined by the following recurrence formulae: $A_{n+1} = \dot{A} + \dot{\theta}B_n$, $B_{n+1} = \dot{B}_n - \dot{\theta}A_n$, $A_1 = \dot{\theta}^2$, $B_1 = \ddot{\theta}(\equiv d/dt)$, $x_i^{(n+1)} = (d/dt)x_i^{(n)}$, $(i = 1,2;\ n = 1,2,\ldots)$. The following theorems are then true:

1.) The geometric locus of the points M^* which are determined by the vector equation $\vec{r}_{M^*} = \vec{r}_M + \lambda_n \vec{w}_M^{(n)}$ is a straight line (D_{M^*}), which, with the straight line (D_M) comprises the angle φ_n which satisfies the relation $tg\varphi_n = \lambda_n B_n / (1 - \lambda_n A_n)$. Here M is a point which is located on a certain

Dokl.Akad.Nauk, 112, fasc.1, 27-28 (1957) CARD 2 / 2 PA - 1913

straight line (D_M) and which participates in a plane-parallel motion.

2.) The reduced accelerations satisfying the relations $\vec{w}^{(n)} = \vec{w}^{(n)}/A_n$, $\vec{w}^{(1)}_r = \vec{w}^{(1)}/A_1 = \vec{w}/A_1$ ($n = 1,2,\ldots$) are characterized by the extremum properties of the function $tg\varphi_n = \lambda_n B_n/(1 - \lambda_n A_n)$. Here A_n and B_n are expressed by the above mentioned extremum properties.

3.)(On the distribution of the accelerations of any order): The geometric locus of the end points of the reduced accelerations of the n-th order of the points of the straight line (D), which is in planeparallel motion, is the straight line which is vertical to the given straight line (D_r).

4.)(Generalized theorem by KOTEL'NIKOV): The circles, which have the reduced accelerations of the n-th order of the points of any planeparallel body as diameter, pass through the present center of the accelerations of the same order.

5.)(Generalized similarity theorem): The ends of the accelerations of n-th order of the points of a planeparallely moved solid body form a figure which is similar to this solid body but is rotated through the angle $\Theta_n = arc\ tg(B_n/A_n)$ if the initial points of these accelerations are located at one point. Here A_n and B_n satisfy the first mentioned conditions.

The theorems mentioned here are the basis of further theorems and lead to a new method (worked out by a group under the supervision of the author) which is called "method od reduced accelerations of any kind".

INSTITUTION:Polytechnic Institute JASSY, Roumania

MANZHERON, D.[Manjeron, D.] prof., doktor fiz.-mat.nauk

Creative cooperation ("Bulletin of the Jassy Polytechnical Institute" [in Rumanian]. Reviewed by D. Manjeron). Nauka i zhizn' 25 no.5:76 My '58. (MIRA 11:5)

1. Redaktor zhurnala "Izvestiya Yasskogo politekhnicheskogo instituta," Rumyniya.
(Rumania--Science--Periodicals)

MANZHERON, D. [Manjeron, D], prof. (Yassy, Rumyniya).

Scientific activities of the Jassy Polytechnical Institute. Priroda 47 no.5:109-110 My '58. (MIRA 11:5)
(Jassy, Rumania—Colleges and universities)

S/179/60/000/01/024/034
E031/E535

AUTHOR: Manzheron, D (Yassy, Roumania)

TITLE: A Three-Dimensional Generalization of Kotel'nikov's Cross

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh nauk, Mekhanika i mashinostroyeniye, 1960, Nr 1, pp 168-169 (USSR)

ABSTRACT: Some theorems are given below which serve as the basis for the method of reduced accelerations of any order (Refs 1,2), generalized for kinematical problems of three-dimensional mechanisms. The method of "threads" is used in the description.
Theorem 1. (The fundamental theorem of the three-dimensional method of reduced accelerations of any order). The geometrical locus of the ends M_n of the reduced accelerations $a^{(n)}_{Mr}$ of the n-th order defined by the vector equations

$$\underline{r}_{M_n} = r_M + a^{(n)}_{Mr} \qquad (1.1)$$

where the point M lies on the straight line D

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$$\underline{r}_M = \underline{r}_o + \mu_M \underline{u}, \quad \underline{u}^2 = 1 \qquad (1.2)$$

belonging to some rigid body in complicated three-dimensional motion, where μ_M is a parameter, $\underline{u}$ is the vector of the straight line (D), $\underline{r}_o$ is the radius vector of the point $O' \in$ (D), defined by Eqs (1.3) to (1.5) and $A_n(\underline{u})$, the straight line (D_n) which is perpendicular to the given straight line, is derived uniquely from A_n by the operation of "resolution on $\underline{u}$" defined by the expression of Eq (1.6). Following A. P. Kotel'nikov (Ref 3), we shall call the set of vectors whose origins lie on the straight line and whose ends lie on the other straight line which is perpendicular to the first, a cross of vectors; the first straight line on which lie the origins of the vectors we shall call the initial straight line of the cross and the second straight line on which the ends lie we shall call the final straight line of the cross. We have the following theorem.

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E031/E535

A Three-Dimensional Generalization of Kotel'nikov's Cross

Theorem 2. (generalization of Kotel'nikov's theorem). The reduced accelerations of the n-th order $\underline{a}_{Mr}^{(n)}$ of the points M lying on the same straight line belonging to some rigid body in general motion in space belong to a cross of accelerations of the same order.

Theorem 3. (Theorem on isogonal crosses). The geometrical locus of points M_n^* defined by the vector equations

$$\underline{r}_{M_n}^* = \underline{r}_M + \lambda_n^* a_M^{(n)}, \quad a_M^{(n)} = \frac{d^{n-1}a_M}{dt^{n-1}} \qquad (1.7)$$

where the straight line (D^*)

$$\underline{r}_M = \underline{r}_o + \mu_M^* \underline{u}, \quad \underline{u}^2 = 1 \qquad (1.8)$$

belongs to some rigid body in complicated motion in space, where λ_n^*, μ_M^* are parameters is a straight line (D_n^*) and the complex angle (written in the form sometimes called dual) $\alpha_n = \theta_n + wd_n$, $w^2 = 0$, between (D^*) and (D_n^*)

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A Three-Dimensional Generalization of Kotel'nikov's Cross

where θ_n is the ordinary angle between the unit vectors of the axes of the straight lines and d_n is the shortest distance between the straight lines is expressed in terms of trigonometrical functions of the complex angle by the Eqs (1.9) to (1.11).

Theorem 4. (The extremal property of three-dimensional accelerations of any order). Reduction of the scalar product of two free unit vectors on the straight lines (D^*) and (D_n^*) given by Eqs (1.7) and (1.8) of theorem 3 to a purely dual (moment) form corresponds to the values

$$\lambda_n^* = \left[A_n - A_n(\underline{u})\right]^{-1} \qquad (1.12)$$

where A_n and $A_n(\underline{u})$ are determined from (1.4) to (1.6), which are known from theorem 1. Since in this case the ordinary angle between the given unit vectors is a right angle the term extremal, given by the theorem, is justified. The results obtained can be used for the solution of problems in the analysis and synthesis of

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S/179/60/000/01/024/034
E031/E535

A Three-Dimensional Generalization of Kotel'nikov's Cross

of three-dimensional mechanisms.
(Note: This is a complete translation except for copying some of the equations)
There are 3 Soviet references.

SUBMITTED: October 16, 1959

Card 5/5

MANZHERON, D. (Jassy, Narodnaya Respublika Rumynii); DREGAN, K.(Jassy, Narodnaya Respublika Rumynii)

Tensor forms of the basic equations of the kinematics of chains and mechanisms. Izv mat inst BAN 4 no.2:57-65 '60.

(EEAI 10:9)

(Calculus of tensors) (Mechanical movements)

16.4500

35869
S/044/62/000/002/062/092
C111/C222

AUTHORS: Manzheron, D., Krivoshein, L. Ye.

TITLE: The approximate solution of some linear integro-differential equations

PERIODICAL: Referativnyy zhurnal, Matematika, no. 2, 1962, 40, abstract 2V213. ("Bul. Inst. politehn. Iasi", 1960, 6, no. 1-2, 17-28)

TEXT: According to the Galerkin method, the Cauchy problem

$$y^{(i)}(x_0)=y_0^{(i)} \quad (i = 0, 1, \ldots, n-1) \quad x_0 \in [a,b] \qquad (1)$$

for the integro-differential equation of the Fredholm type

$$L[y] = f(x) + \lambda \int_a^b \sum_0^m K_i(x,t)\, y^{(i)}(t)\, dt \qquad (2)$$

is solved approximately. Here $L[y] = y^{(n)}(x) + \sum_1^n a_i(x) y^{(n-i)}(x)$, $n \geq m$, λ-- parameter. The solution is sought in the form

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$$y_k(x) = \varphi(x) + \sum_1^k b_s \varphi_s(x),$$

where the n-times differentiable functions $\varphi(x)$ and $\varphi_s(x)$ are linearly independent and satisfy the conditions $\varphi^{(i)}(x_o) = y_0^{(i)}$, $\varphi_s^{(i)}(x_o) = 0$ ($i = 0, 1, \ldots, n-1$; $s = 1, \ldots, k$). The unknown coefficients b_s ($s=1,\ldots, k$) of the approximating function $y_k(x)$ are determined through a system of equations, which is obtained in one of the following ways: a) from the condition that the deviation is orthogonal to an arbitrary system of k linearly independent functions; b) from the condition that the square integral of the deviation is a minimum; c) with the collocation method; d) from the condition that the deviation has a contact of first order with the x-axis. In all cases, the deviation of the approximate solution from the rigorous solution of (1) - (2) is estimated for all $x \in [a, b]$, $|\lambda| \leq |c|$ (assuming that certain inequalities are fulfilled).

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S/044/62/000/002/062/092
C111/C222

The approximate solution of some ...

Approximate solutions of problem (1) are constructed in an analogous way for integro-differential equations of the Volterra type, where an error estimate is given. The method is also applied to the integral equation which corresponds to (1)-(2); the error is estimated. The method of integral equations is used to solve (1)-(2) in the case $m > n$, where it is assumed that the functions $a_i(x)$, $f(x)$ and the kernels $K_i(x, s)$ are differentiable as is necessary.

[Abstracter's note: Complete translation.]

Card 3/3

38500

S/044/62/000/005/041/072
C111/C444

16.6500

AUTHORS: Manzheron, D., Krivoshein, L. Ye.

TITLE: The approximative solution of boundary value problems for ordinary differential equations

PERIODICAL: Referativnyy zhurnal, Matematika, no. 5, 1962, 38, abstract 5V182. ("Bul. Inst. politehn. Iasi," 1960, 6, no. 3-4, 21-30)

TEXT: It is presumed that the boundary value problem

$$R_j[y] \equiv \sum_{i=0}^{n-1} [a_{ij} y^{(i)}(c) + b_{ij} y^{(i)}(d)] = \gamma_j \quad (j=1,2,\ldots,n) \qquad (1)$$

$$L[y] = f(x) + \lambda \int_a^b \sum_{j=0}^{m} K_j(x,t)\, y^{(j)}(t)\, dt \qquad (2)$$

where a_{ij}, b_{ij}, γ_j $(i+1,\ j=1,\ldots,n)$ are well-known numbers; $L[y] \equiv y^{(n)}(x) + \sum_{i=1}^{n} a_i(x)\, y^{(n-i)}(x)$; the functions appearing in (2) are piecewise

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The approximative solution of boundary ...

continuous for $n \geq m$ and $p = n-m$-times differentiable with respect to x on $[a,b]$ for $m > n$; λ is a parameter; $[c,d] \subseteq [a,b]$ possesses a solution. The solution is searched with the rate

$$y_k(x) = \varphi_0(x) + \sum_{s=1}^{k} \alpha_s \varphi_s(x) \qquad (3)$$

where the well-known linear independent functions $\varphi_0(x), \varphi_1(x), .., \varphi_k(x)$ are n-times continuously differentiable, satisfying the boundary conditions $R_j[\varphi_0] = \gamma_j$; $R_j[\varphi_s] = 0$ $(j = 1,...,n;\ s=1,...,k)$. The unknown coefficients are determined according to methods of Galerkin, by the least square error and by collocation; the deviation of the function (3) from the exact solution of (1), (2) is estimated. Analogously one solves the boundary value problem (1) for the Volterra integro-differential equation

$$L[y] = f(x) + \lambda \int_0^x \sum_{i=0}^{m} K_i(x,t)\, y^{(i)}(t)\,dt \qquad (4)$$

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where

$$L[y] = y^{(n)}(x) + \sum_{i=1}^{n} a_i(x)\, y^{(n-i)}(x), \quad x \in [a, d] .$$

The given approximation methods are not only applied immediately on the problems (1), (2) and (1), (4), but also on especially constructed so-called solving integral equations (as well in the case of $n \geq m$ as in the case of $m > n$).

[Abstracter's note: Complete translation.]

Card 3/3

MANZHERON, D. (Yassy, Rumynskaya Narodnaya Respublika)

Generalized forms of equations in analytic dynamics. Izv.AN SSSR. Otd.tekh.nauk.Mekh.i mashinostr. no.2:128 Mr-Ap '62. (MIRA 15:5)

1. Yasskiy politekhnicheskiy institut.
(Dynamics)

L 23315-65 EWT(d) Pg-4 IJP(c)

ACCESSION NR: AR5002276 S/0044/64/000/010/B062/B062

SOURCE: Ref. zh. Matematika, Abs. 10B292

AUTHOR: Krivoshein, L. Ye.; Manzheron, D.

TITLE: Contribution to the solution of the initial problem for the integro-differential equation in partial derivatives

CITED SOURCE: Sb. Materialy 12-y Nauchn. konferentsii prof.-prepodavat. sostava Fiz.-matem. fak. Kirg. un-t. Sekts. matem. Frunze, 1964, 17-20

TOPIC TAGS: integro differential equation, differential operator, linear transformation, integral equation

TRANSLATION: The initial linear integro-differential equation contains differential operators of the form

$$\left(\frac{\partial^s}{\partial\xi_0^s}+\frac{\partial^s}{\partial\eta_0^s}\right)_{\sigma}^{l}\frac{\partial^{l+k\sigma}}{\partial\xi_0^l\partial\eta_0^{k\sigma}}.$$

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L 23315-65

ACCESSION NR: AR5002276

By means of linear transformation this equation is brought into the form

$$P^{mn}u(A)+\int_S\int\sum_{k,l=0}^{n}\left[T_{kl}(A,B)P^{kl}u(B)+K_{kl}(A,B)\frac{\partial^{l+k}u(B)}{\partial l^l\partial\tau^k}\right]dld\tau=$$
$$=F(A), \qquad (1)$$

where $P^{kl}u(A)\equiv\partial^{k+l}u(A)/(\partial x^k\partial y^l)$, $S=[a<x<b]\times[c<y<d]$

The solution of equation (1) is sought which would satisfy the conditions

$$\frac{\partial^l u(A)}{\partial x^l}\Big|_{x=a}=\psi_l(y),\ \frac{\partial^l u(A)}{\partial y^l}\Big|_{y=c}=\varphi_l(x)\ (l=0,1,\ldots$$
$$\ldots,n-1),\ \varphi_0(a)=\psi_0(c). \qquad (2)$$

Applying results of the paper (RZHMat, 1964, 3B373), a system of integral equations is constructed through which the conditions for the existence and continuous dependence of the solution from known functions entering into (1) and (2) are determined. Other results are also presented. V. Fedorov

SUB CODE: MA ENCL: 00

Card 2/2

L 54892-65 EWT(d) Pg-4 IJP(c)

ACCESSION NR: AR5016321 UR/0044/65/000/006/B067/B067
517.948.34

SOURCE: Ref. zh. Matematika, Abs. 6B339

15
B

AUTHORS: Manzheron, D.; Krivoshein, L. Ye.

TITLE: Solution of the Goursat problem for a class of integro-differential equations

16

CITED SOURCE: Dokl. 3-y Sibirsk. konferentsii po matem. i mekhan., 1964. Tomsk, Tomskiy un-t, 1964, 133-135

TOPIC TAGS: integral equation, differential equation

TRANSLATION: The Goursat problem for a linear integro-differential equation with higher Picone derivative (RZhMat, 1964, 3B373) is solved. Conditions for existence and for continuous dependence of the solution on known functions together with an estimate of the modulus of the solution are given. V. D. Fedorov

SUB CODE: MA ENCL: 00

Card 1/1

ACCESSION NR: AP4031760 S/0251/64/033/003/0521/0528

AUTHOR: Manzheron, D.

TITLE: Optimal functional equations of dynamic programming related to a class of boundary value problems in "total derivatives" (Presented by Academician O. D. Oniashvili on 25 January 1963)

SOURCE: AN GruzSSR. Soobshcheniya, v. 33, no. 3, 1964, 521-528

TOPIC TAGS: optimal function equation, dynamic programming, boundary value problem, total derivative, calculus of variations, differential operator, harmonic oscillator

ABSTRACT: The author considers the solution of two boundary value problems

$$u'' + \lambda^2 f(t)u = 0, \quad (1)$$

$$u(0) = u(1) = 0 \quad (2)$$

and

$$\frac{\partial^4 u}{\partial x^2 \partial y^2} - \lambda A(x, y)u = 0, \quad (3)$$

$$u\Big|_{Fr\,R} = 0, \quad R \equiv \begin{pmatrix} 0 \le x \le 1 \\ 0 \le y \le 1 \end{pmatrix}. \quad (4)$$

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ACCESSION NR: AP4031760

where u' is given by

$$u' \equiv \frac{\partial^{2m} u}{\partial x_1 \partial x_2 \cdots \partial x_{2m}} \qquad (5)$$

He reduces these problems to problems in the calculus of variations which he solves by obtaining functional equations by the method of dynamic programming. Orig. art. has: 40 formulas.

ASSOCIATION: Rumynskaya Narodnaya Respublika Yassldy politeknicheskiy institut (Rumanian Peoples Republic, Jassy Polytechnical Institute)

SUBMITTED: 25Jan63 DATE ACQ: 01May64 ENCL: 00

SUB CODE: MA NO REF SOV: 005 OTHER: 018

Card 2/2

MANZHEYEV, D. N.

Analyzing fulfillment of the labor productivity plan at an industrial enterprise. Bukhg. uchet 15 no.5:12-17 My '58. (MIRA 11:5)
(Labor productivity)

KOPNYAYEV, V.P., dots.; MASSARYGIN, F.S., dots.; MANZHEYEV, D.N., dots.; KOPNYAYEV, V.P., dots.; USATOV, I.A., kand. ekonom. nauk; IL'IN, V.M., dots.; KOLYAKOV, D.S.; MOTOV, S.I., dots.; KOKOTKOVA, L., red.; MEDVEDEVA, R., red.; TELEGINA, T., tekhn. red.

[Analysis of the financial and economic operations of enterprises]Analiz finansovo-khoziaistvennoi deiatel'nosti predpriiatii. Pod obshchei red. Kopnyayeva. Moskva, Gosfinizdat, 1962. 357 p. (MIRA 15:12)
(Finance) (Industrial management)

DORDZHIYEV, B.S.; KIRBASOVA, M.B.; MUSHANOV, S.P.; MANZHIKOVA, R.M.; CHERNOUSOV, I.P.; KIYEVSKAYA, V.I.; DZHELACHINOV, E.B., red. GAYDASH, Ya., tekhn. red.

[Economy of the Kalmyk A.S.S.R.; statistical collection] Narodnoe khoziaistvo Kalmytskoi ASSR; statisticheskii sbornik. Elista, Kalmytskoe knizhnoe izd-vo, 1960. 107 p. (MIRA 14:8)

1. Kalmuck A.S.S.R. Statisticheskoye upravleniye. 2. Kollektiv rabotnikov Statisticheskogo upravleniya Kalmytskoy ASSR (for all except Gaydash). 3. Nachal'nik Statisticheskogo upravleniya Kalmytskoy ASSR (for Dzhelachinov)
(Kalmyk A.S.S.R.—Statistics)

MANZHIN, V. V.

"Codex of Laws and Regulations for Commercial Seafaring and Ports", published by State Publishers of Sea Transport Literature, Moscow, 1940

MANZHINSKIY, B. A.

Contemporary international trade in the capitalist camp. Moskva, Vneshtorgizdat. 1954.
111 p.

MANZHIROVA, G.A., SVESHNIKOV, P.M., TOLOKONNIKOV, V.V., FOMIN, V.M., GRAMM, M.N., VASYUTINSKAYA, A.B., KVANINA, L.I.

"Akchagyl Deposits in the Lower Reaches of the Amu-Darya"
Dokl. Uz. SSR, 1953, No 12, 18-21, (Uzbekistan resume)

In 1952 in the lower reaches of the Amu-Darya during columnar drilling in a number of wells the drillers uncovered sandstone-clay deposits of the Akchagyl age with thicknesses up to several dozen meters. These deposits lie on an eroded surface of the Paleogene and are superimposed by ancient delta sedimentary deposits of the Anthropogene. The character of the ostracod fauna testifies to the strong fresh-water nature of Akchagyl gulf. (RZhGeol, No 3, 1954)

SO: W_31187, 8 Mar 55

MANZHOLA, Ye.I. [Manzhola, IE.I.]

Novocaine block of the active points of the skin in the treatment of patients with bone and joint tuberculosis. Fiziol. zhur. [Ukr.] 8 no.2:210-213 Mr-Ap '62. (MIRA 1 :5)

1. Laboratory of the Higher Nervous Activity and Trophic Functions of the Nervous System of the A.A.Bogomoletz Institute of Physiology of the Academy of Sciences of the Ukrainian S.S.R. and th: Kiev Research Institute for Orthopedics and Traumatology.
(NOVOCAINE) (SKIN) (TUBERCULOSIS)

MANZHORA, A.A.

Experience in the operation of the Troitskoye Fats Combine.
Masl.-zhir. prom. 24 no.1:33 '58. (MIRA 11:3)

1.Troitskiy zhirkombinat.
(Oils and fats)

MANZHOS, A.M.

Larch

Nature of development of the female gametophyte of Siberian larch in cross-pollination and self-pollination, Dokl. AN SSSR, No. 2, 1952.

Monthly List of Russian Accessions, Library of Congress, November 1952. Unclassified.

MANZHOS, A. M.

Manzhos, A. M.

"The biology of blossoming and fertilization of the Siberian larch with xenogamic and geitonogamic fertilization." Acad Sci USSR. Inst of Forestry. Moscow, 1956 (Dissertation for the degree of Candidate in Biological Science)

Knizhnaya letopis'
No. 25, 1956. Moscow

MANZHOS, A.M.

20-1-54/64

AUTHOR MANZHOS, A.M.

TITLE The Embedding and Grouping of the Small Microsporophyll Spadices of the Siberian Larch(Larix Sibirica LDB)During the Course of One Annual Cycle. Zalozheniye i formirovaniye mikrosporofillovykh koloskov u listvennitsy sibirskoy (Larix Sibirica LDB) - Russian.)

PERIODICAL Doklady Akademii Nauk SSSR, 1957, Vol 114, Nr 1, pp 195-198 (U.S.S.R.)

ABSTRACT The paperunder review deals with the investigation of the different stages of microsporogenesis and of the time span connected with it, with respect to the larix Sibirica. Very little research has been done on this process so far.

The investigations were conducted during 1951-52-53, i.e. during the two annual cycles 1951-52 and 1952-53. During this period, the young shoots were cut off twice a month. The preparations were colored with iron hematoxylin and with Newton's gention violet. The observations described in the paper under review showed, inter alia, that in the early stage of development there are produced in the microsporophyll four microsporangia, of which only two become fully developed. The recognition of this fact is of great importance for a correct picture of the evolution of the microsporophyll. No deep hibernation exists for the sprout buds of the Siberian larch. During the winter, the differentiation process of the archeospores takes place.

Card 1/2 (1 chart,references- S.V.Viktorov, Usp.sovr.biol.14,v.3(1941),K.I.Meier,

The Embedding and Grouping of the Small Microsporophyll Spadi- 20-1-54/64
ces of the Siberian Larch(Larix Sibirica LDB)During the Course of One Annual Cycle.

Razmnozhenie rastenii, m., 1937, J.Dovle, Ann.Bot.Soc.1916, K.Schnarf, Handbuch der Pflanzenanatomie, Lief. 3o, Berlin, 1933.

ASSOCIATION Not Given.
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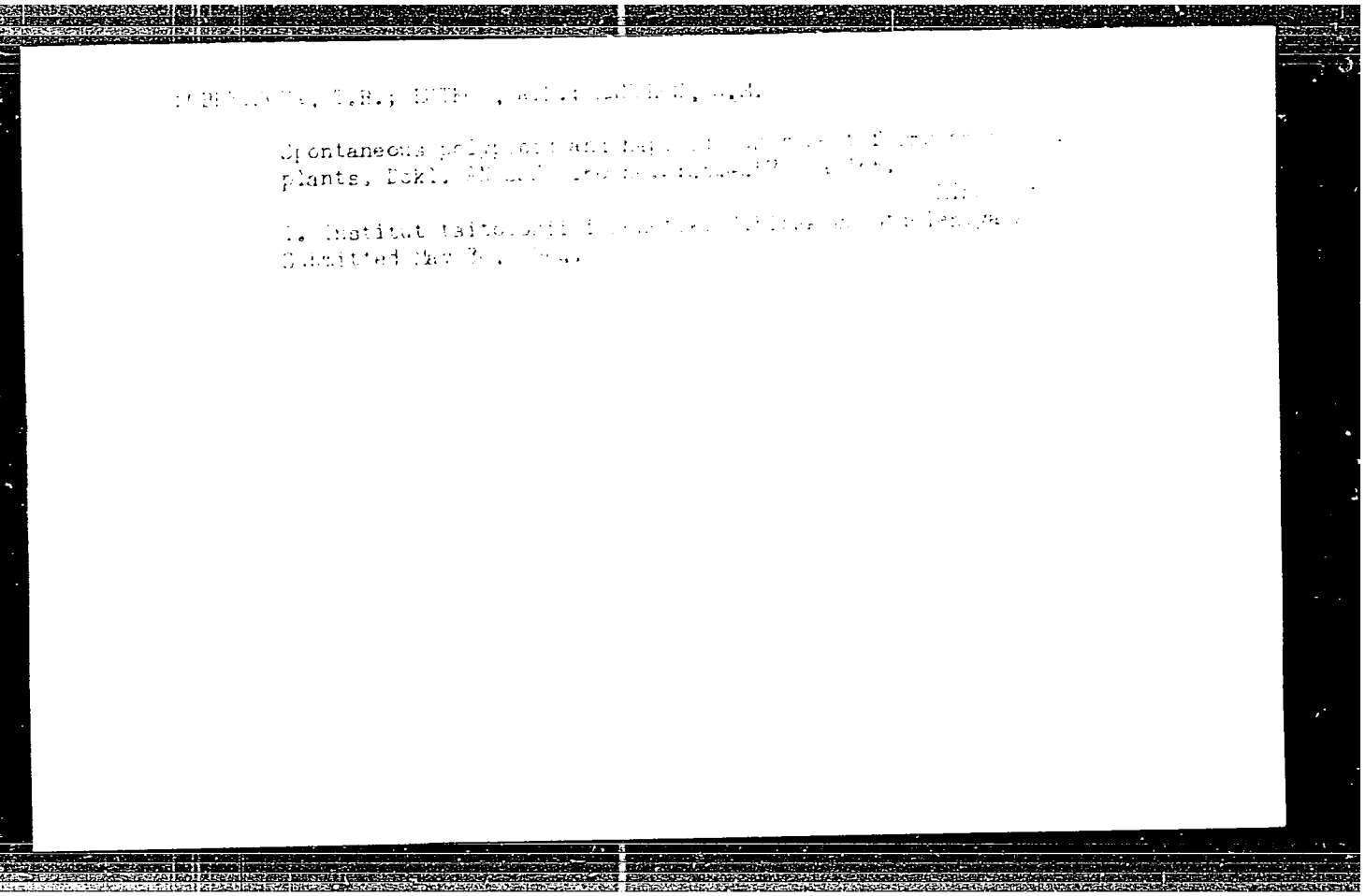
Bud types in the Siberian larch and their phenology. Bot. zhur. 44 no.8:1148-1154 Ag '59. (MIRA 13:2)

1. Institut lesa AN SSSR, Moskva.
(Larch) (Plants, Flowering of)



Spontaneous

plants, Dokl.

I. Institut

Submitted

DOBRETSOVA, T.B.; LUTKOV, A.N.; MANZHOS, A.M.

Spontaneous polyploid and haploid forms of twin sugar beet plants. Dokl. AN SSSR 164 no.4:921-924 O '65. (MIRA 18:10)

1. Institut tsitologii i genetiki Sibirskogo otdeleniya AN SSSR. Submitted July 20, 1964.

MANZHOS, F. M.

Short manual on woodworking
Moskva, Goslestekhizdat, 1945. 267 p. (55-20658)

TT180.M32

PHASE I BOOK EXPLOITATION 868

Andreyev, N.V., Kalyuzhnyy, V.G., Konstantinov, A.S., Livshits, M.P., Manzhos, F.M., Savkov, Ye.I.; Uspasskiy, P.P., Feygina, A.Ya., Chebotarevskiy, V.V., Sheydeman, I.Yu.

Nemetallicheskiye materialy, ikh obrabotka i primeneniye (Nonmetallic Materials, Their Processing and Use) Moscow, Oborongiz, 1949. 535 p. 6,000 copies printed.

Ed. (title page): Kalyuzhnyy, V.G.; Ed. (inside book): Ponomareva, K.A.; Tech. Ed.: Zudakin, I.M.

PURPOSE: This book is intended for students of aviation institutes and other institutes and it may also be useful to engineering technicians dealing with nonmetal materials.

COVERAGE: The book consists of two parts and deals with various nonmetallic materials used in the aircraft industry. The first

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part discusses wooden materials and the second part presents basic information on plastics, adhesives, textiles, paper and rubber. The basic mechanical and chemical properties of nonmetallic materials, their engineering requirements and methods of processing them are presented. The book was written by personnel of the Moscow Aircraft Institute imeni Sergo Ordzhonikidze, the Moscow Aircraft Engineering Institute, the All-Union Scientific Research Institute for Aircraft Materials and other organizations. Chapters I, II, V, and VI were written by Ye. I. Savkov, chapter III by Candidate of Technical Sciences F.M. Manzhos, chapter IV by Candidate of Technical Sciences V.G. Kolyuzhnyy, chapters VII and VIII by Candidate of Technical Sciences A.Ya. Feygina, chapters IX and XI by Professor P.P. Uspasskiy, chapter X by Candidate of Technical Sciences N.V. Andreyev, chapter XII by Candidate of Technical Sciences I.Yu. Sheydeman, and N.V. Andreyev, chapter XIII by Candidate of Technical Sciences I.Yu. Sheydeman, and Engineer A.S. Konstantinov, chapter XIV by Candidate of Technical Sciences V.V. Chebotarevskiy, and I.V. Andreyev, chapter XV by Candidate of Technical Sciences

V.V. Chebotarevskiy, and chapter XVI by Engineer M.P. Livshits and Candidate of Technical Sciences N.V. Andreyev. The authors thank Professor A.V. Shepelyavyy, Professor, Doctor of Chemical Sciences I.P. Losev, Engineers A.A. Babichev, V.S. Bondarev for their assistance in supplying data and reviewing the book, and they also thank Engineer V.P. Leont'yev for his assistance in preparing chapter X, Paper Materials. There are 60 Soviet references.

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MANZHOS, F.M., professor, doktor tekhnicheskikh nauk, redaktor; KRYUGER, Yu.V., redaktor; TOKER, A.M., tekhnicheskiy redaktor.

[Manual for the woodworking machine operator; work with circular saws] Pamiatka stoliaru-stanochniku; rabota na kruglopil'nykh stankakh. Moskva, Gos.izd-vo lit-ry po stroit. i arkhitekture, 1956. 54 p. (MLRA 9:5)

1.Moscow. Gosudarstvenn[illegible] institut po vnedreniyu peredovykh metodov rabot i truda v stroitel'stve.
(Saws) (Wo[illegible])

MANZHOS, Fedor Matveyevich, professor, doktor tekhnicheskikh nauk; ROZHKOV, D.S., redaktor; KOLESNIKOVA, A.P., tekhnicheskiy redaktor.

[Testing wood working machines for precision] Ispytaniia derevorezhushchikh stankov na tochnost' v usloviiakh ekspluatatsii. Moskva, Goslesbumizdat, 1956. 113 p. (MLRA 9:2)
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[Manual for carpenters operating machine tools; work on circular saws] Pamiatka stoliary-stanochniku; rabota na kruglopil'nykh stankakh. Izd.2-oe. Moskva, Gos.izd-vo lit-ry po stroit.i arkhit., 1957. 54 p. (MIRA 11:1)

1. Moscow. Gosudarstvennyy institut po vnedreniyu peredovykh metodov rabot i truda v stroitel'stve. 2. Starshiy instruktor peredovykh metodov truda po stolyarno-plotnichnym rabotam instituta Orgstroy Ministerstva stroitel'stva predpriyatiy metallurgicheskoy i khimicheskoy promyshlennosti (for Nechunayev). (Saws)

MOVNIN, Mikhail Savel'yevich, prof., doktor tekhn. nauk; MANZHOS, F.M., prof., doktor tekhn. nauk, retsenzent; KONDRASHKIN, Ye.P., dots., red.; VARKOVETSKAYA, A.I., red. izd-va; SOKOLOVA, L.V., tekhn. red.

[Feeding machanisms of woodworking machinery] Podaiushchie mekhanizmy derevoobrabatyvaiushchikh stankov. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. lit-ry, 1958. 178 p. (MIRA 11:7)
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[Woodworking machinery] Konstruktsii derevoobrabatyvaiushchikh stankov. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. lit-ry. Vol. 3. [Installation, repair, and operation] Montazh, remont i ekspluatatsiia. 1958. 566 p. (MIRA 11:12)
(Woodworking machinery)

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[Precision of mechanical woodworking] Tochnost' mekhanicheskoi obrabotki drevesiny. Moskva, Goslesbumizdat, 1959. 261 p. (MIRA 13:3)

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Efficient arrangement of revolving cutter blocks in planing machines. Der.prom. 8 no.1:9-13 Ja '59. (MIRA 12:1)
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MANZHOS, F.M., prof., doktor tekhn.nauk; VOSKRESENSKIY, S.A., prof., doktor tekhn.nauk; ORLOV, M.N., dots., kand.tekhn.nauk; SOLOV'YEV, A.A., assistent

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1. Kafedra stankov i instrumentov Moskovskogo lesotekhnicheskogo instituta. 2. Zaveduyushiy kafedroy stankov i instrumentov Moskovskogo lesotekhnicheskogo instituta (for Manzhos). (Woodworking machinery) (Afanas'ev, P.S.)

PIZHURIN, Andrey Abramovich, kand. tekhn. nauk; MANZHOS, F.M., red.; LEBEDEVA, I.D., red.izd-va; VDOVINA, V.M., tekhn. red.

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(Turning)

MANZHOS, F.M., doktor tekhn. nauk, prof.

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30 Jl '64. (MIRA 17:11)

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Automation of the quality control of parts made of wood and wood plastics, Avtomatizatsiia kontrolia kachestva detalei iz drevesiny i drevesnykh plastikov. Moskva, Lesnaia promyshlennost', 1965. 265 p. (MIR 18:6)

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Use of ultrasonic techniques in the industry of the Ryazan Economic Region. Za indus.Riaz. no.2:61-63 D '61. (MIRA 16:10)

1. Zaveduyushchiy kafedroy tekhnologii materialov Ryazanskogo radiotekhnicheskogo instituta.

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A061/A126

AUTHORS: Manzhos, G.A., Posokhin, A.I.

TITLE: The use of ultrasound for cutting circular quartz resonators

PERIODICAL: Referativnyy zhurnal, Avtomatika i radioelektronika, no. 10, 1962, 19, abstract 10-5-38k (In collection: Prom. primeneniye ul'trazvuka. Kuybyshevsk. aviats. in-t, Kuybyshev, 1961, 97 - 103)

TEXT: A 1.8-kw quartz-machining ultrasonic machine tool with a working frequency of 20 kc has been developed by the Kafedra tekhnologii metallov i el--radiomaterialov Ryazanskogo radiotekhnich. in-ta (Department of Metal and Radioelectric Material Technology at the Ryazan Radio Engineering Institute) in collaboration with other organizations. The tool is intended for cutting plates and circular resonators from quartz, but it can also be used for making grooves and complex openings, and for cutting other brittle materials of poor workability. An amplifier in the frequency range of 15 - 20 kc ensures a power output of 500 - 1,800 w; the master oscillator works on an RC circuit. The electroacoustic transducer consists of a magnetostriction oscillator and a concentrator with the

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