21591

S/109/60/005/010/014/031
E033/E415

9.4140

AUTHOR: Kozina, G.S.

TITLE: Some Special Features of a Double-Sided Target Memory Tube (Potentialoscope) With Excited Conductance in Thin Aluminium-Oxide Layers

PERIODICAL: Radiotekhnika i elektronika, 1960, Vol.5, No.10, pp.1672-1679

TEXT: This article was presented at the 9th All-Union Conference on Cathode Electronics, Moscow, October 1959.

After a brief review of the history of graphekon-type memory tubes, the author describes a double-sided target memory tube, proposed by I.F.Pes'yatskiy (Ref.1,2), in which aluminium oxide is used for the target material. The surface of the dielectric target is irradiated by the reading beam (energies 500 ev) and is charged to some potential difference relative to the signal plate. The writing beam (energies 8 kev) "excites conductance" in the dielectric layer at the areas where it impinges. The useful signal is obtained from the difference between the secondary emission currents from the written areas and from the remainder of

Some Special Features of ...

the target surface (the background). The layers of aluminium oxide (0.1 to 0.2 microns thick) are prepared by oxidation in air of layers of aluminium on an organic substrate which is laid on a finely-divided supporting mesh. The signal plate consists of a layer of aluminium 0.2 microns thick. As well as a collector, there is also a collector grid placed 2 mm from the target. The excited conductance was investigated under operation conditions. To measure the excited conductance coefficient, the target surface was charged by the reading beam to some difference potential. Then part of the target was bombarded by the fast electrons of the writing beam and the potential at this part was reduced. The charging current in the target circuit was measured and the time-integral of this current, i.e. the quantity of electricity necessary to restore the surface potential, equalled the quantity of electricity Q which passed through the layer when the conductance was excited. The ratio of Q to the quantity of electricity carried to the written area by the writing beam gave the effective conductance coefficient δ of the target. The graphs of δ against the energy V of the primary beam, exciting the target from the signal plate side, is produced and, for

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comparison, a curve of $\delta(V)$ for excitation of the same layer from the dielectric side is also drawn. Maximum value of δ was 8 to 10. The relation between δ and the initial potential between the collector and the target (signal plate) is also shown graphically. A characteristic feature of aluminium oxide layers is that excited conductance is observed only when the surface potential is positive with respect to the signal plate. The dependence of the secondary emission coefficient σ on the difference of potential initially communicated to the layer was investigated and the method of measuring σ is described. With high values of collector voltage (400 V) σ falls 1.5 to 2.5 times when the voltage of the surface relative to the signal plate becomes positive and this applies whether the supporting mesh is on the surface or on the signal plate side. The results are explained on the assumption that particles of metallic non-oxidized aluminium in the layer form a grid in metallic contact with the signal plate. This negatively-charged grid exerts a restraining action on the emission of secondary electrons. This effect permits a high potential difference between the collector and target (150 to 200 V) and ensures a discrimination between

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secondary electrons from the background and from areas discharged by excited conduction. The special properties of aluminium-oxide targets affect the operating conditions of the tube and lead to a reduction in the background signals which, in the main, are due to the space charge around the target. Despite the small thickness of the layers, the target is robust and stable under electron irradiation. This leads to an increase in the target dimensions and a gain in the resolving power. The basic characteristics of the potentialoscope (the magnitude of the useful signal I_s, the ratio of I_s to the parasitic signals I_{ps}, the resolving power R (determined for 15% modulation depth)), are plotted as functions of the writing beam current. R = 700 - 800 television lines/dia when I_s/I_{ps} = 6 - 10 and R = 500 television lines/dia when I_s/I_{ps} = 10 - 15. The observation time changes within the limits T = 16 - 480 sec, depending on the reading current magnitude. The writing speed reaches 1000 m/sec but the results given relate to writing speed of 150 m/sec. Acknowledgments are expressed to I.F.Pes'yatskiy who advised in this work, and N.I.Polonchuk and V.P.Prusov who assisted in the development and realization of the measuring

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apparatus. There are 9 figures and 10 references: 4 Soviet and 6 non-Soviet.

SUBMITTED: December 21, 1959

Card 5/5

68886
S/051/60/008/02/012/036
E201/E391

24.3600

AUTHORS: Kozina, G.S. and Poskacheyeva, L.P.

TITLE: Integral Luminescence Brightness of ZnS-Cu and ZnS-Cu, Mn Phosphors in Pulsating (Electric) Fields

PERIODICAL: Optika i spektroskopiya, 1960, Vol 8, Nr 2, pp 214 - 217 (USSR)

ABSTRACT: The authors report measurements of the integral brightness (luminance) of electroluminescence of green (ZnS-Cu) and yellow (ZnS-Cu, Mn) phosphors excited with unipolar sinusoids and π-shaped pulses. Phosphor layers, 100 μ thick, were prepared by deposition of a mixture of the phosphor and dielectric binder on a glass plate coated with a transparent conducting film (this film served as one of the electrodes). A second electrode was prepared by vacuum deposition of aluminium on top of the phosphor layer. The measuring circuit is shown schematically in Figure 1: voltage was controlled by means of an oscillograph and brightness was measured using a selenium photocell. Electroluminescent brightness of yellow phosphors (ZnS-Cu, Mn) in pulsating fields was found to be several

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Integral Luminescence Brightness of ZnS-Cu and ZnS-Cu, Mn Phosphors in Pulsating (Electric) Fields

times greater than their brightness in two-directional (ordinary AC) fields, as shown in Figures 2 and 3. Increase of the frequency reduces the rise of the electroluminescent brightness in unipolar pulse fields compared with two-directional (alternating) fields: at 100 c/s this rise is 600%, while at 500 c/s it falls to 270%. The rise of brightness was found to be accompanied by a considerable rise of the current passing through the phosphor layer. The rise of electroluminescent brightness and of the current were due to simultaneous action of DC and AC (two-directional) components; pulse fields can be represented as resulting from superposition of DC and AC fields. Brightness of electroluminescence of green (ZnS-Cu) phosphors in unipolar pulse fields was only slightly smaller than that in two-directional fields (Figure 4). The difference between the behaviour of ZnS-Cu, Mn and ZnS-Cu phosphors is due to the fact that the former luminesce in DC fields and are consequently

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S/051/60/008/02/012/036
E201/E391

Integral Luminescence Brightness of ZnS-Cu and ZnS-Cu, Mn Phosphors in Pulsating (Electric) Fields

affected by the DC component of the pulse fields. There are 4 figures and 3 references, 1 of which is Soviet and 2 English.

SUBMITTED: May 25, 1959

Card 3/3

68887

S/051/60/008/02/013/036
E201/E391

24.3200

AUTHORS: Kozina, G.S., Favorin, V.N. and Anisimova, I.D.

TITLE: Electroluminescence Brightness Waves Under the Conditions of Simultaneous Action of DC and AC Fields

PERIODICAL: Optika i spektroskopiya, 1960, Vol 8, Nr 2, pp 218 - 223 (USSR)

ABSTRACT: The authors report results of an investigation of the electroluminescence brightness waves of green (ZnS-Cu) and yellow (ZnS-Cu, Mn) phosphors excited simultaneously with AC and DC fields. Phosphor layers, 50-100 μ thick, were prepared by depositing a mixture of the phosphor and a dielectric binder on a glass plate coated with a conducting transparent film (which served as one of the electrodes). A second electrode was prepared by depositing aluminium in vacuo on top of the phosphor layer. DC and AC fields were applied to the phosphor layer using the circuit shown in Figure 1. The current through the layer was measured with an ammeter; brightness waves were recorded by means of a photo-multiplier FEU-27 and two oscillographs connected in parallel: ENO-1 (used to measure the DC component) and

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a double-beam instrument 2K0-721 used to compare the brightness with the voltage waves. The AC voltages were either Π -shaped pulses or 100 c/s sinusoids. Distortions of the brightness waves of the yellow phosphors (Figures 3-7) on variation of the ratio of the DC and AC components of the applied voltage were found to be related to the conductivity of the phosphors. The conduction current at which distortion of the brightness waves appeared depended on the amplitude of the AC voltage. At low AC voltages distortions of the brightness waves were found even at current densities of 10^{-8} - 10^{-7} A/cm^2 (Figure 5a). When AC voltages were high (Figure 5б) distortions occurred at currents of 10 μA/cm^2 and a rectangular form of the brightness waves was observed at currents greater than 60 μA/cm^2. The observed phenomena are explained by superposition of the

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S/051/60/008/02/013/036
E201/E391

Electroluminescence Brightness Waves Under the Conditions of Simultaneous Action of DC and AC Fields

non-additive effects of DC and AC fields. Distortion of the brightness waves on simultaneous application of AC and DC fields was not observed in the green phosphors (Figure 2). There are 7 figures and 3 Soviet references.

SUBMITTED: May 25, 1959

Card 3/3

87008

6.3000(1024,1035,1141)
6.4780

S/051/61/010/001/008/017
E201/E491

AUTHORS: Favorin, V.N. and Kozina, G.S.

TITLE: Electroluminescence of ZnS:Cu:Mn powders in a Constant Electric Field

PERIODICAL: Optika i spektroskopiya, 1961, Vol.10, No.1, pp.91-95

TEXT: The authors investigated d.c. electroluminescence and electrical conductivity of ZnS:Cu:Mn powders in a dielectric medium (a mixture of solid synthetic resins). Fig.1 gives the electroluminescence spectra in d.c. (curve 1) and a.c. fields of 400 c/s (curve 2) and 3000c/s (curve 3) frequencies. Fig.1 shows that the short-wavelength bands were produced in alternating fields only. It follows that in d.c. fields, electroluminescence was practically all due to manganese centres. The electro-luminescence brightness B in d.c. fields and the conduction current J initially decreased with time (Fig.2). After a certain time in an applied field, both B and J reached stable values. When the electric field was removed some of the electroluminescence brightness was recovered but it fell again on a second application of a d.c. field (the right-hand part of Fig.2).

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S/051/61/010/001/008/017
E201/E491

Electroluminescence of ZnS:Cu:Mn Powders in a Constant Electric Field

The same occurred with the conduction current J. This behaviour indicated that part of the decay of B and J was due to irreversible changes in the structure of the phosphor on passing a direct current. Irreversible changes appeared also in the dependences of B and J on an applied field (Fig.3). At applied fields $E = 10^4 - 10^5$ V/cm it was found that $B = KE^{\alpha}$ and $J = ME^{\beta}$ (Fig.3). From this, an empirical relationship $B = LJ^{\alpha/\beta}$ (Fig.4) was deduced; here L is a constant coefficient. Fig.5 shows the dependence of the resistivity (ρ) on the field intensity for a mixed phosphor-dielectric layer to which an electric field was previously applied (curves 1 and 2), for a similar mixed layer without previous application of an electric field (curve 3), for a layer consisting of resins alone (curve 4) and for a pressed phosphor powder without the resin binder (curves 5 and 6). The results are explained by excitation of manganese activator centres by electrons injected at the electrodes and by luminescence on de-excitation of these centres.

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S/051/61/010/001/008/017
E201/E491

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The required conductivity in the dielectric binder is produced by high field intensities. Acknowledgments are made to F.M.Pekerman and his colleagues for preparation of the phosphor powders. There are 5 figures and 4 references: 4 Soviet and 1 non-Soviet.

SUBMITTED: September 2, 1959

Card 3/3

94,3500

S/048/61/025/004/018/048
B104/B201

AUTHORS: Favorin, V. N., Kozina, G. S., and Anisimova, I. D.

TITLE: Study of the electroluminescence characteristics of ZnS-Cu and ZnS-Cu,Mn layers in excitation with constant and pulsed voltage

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, v. 25, no. 4, 1961, 487-492

TEXT: The present paper has been read at the 9th Conference on Luminescence (Crystal Phosphors), Kiyev, June 20-25, 1960. G. S. Kozina discovered in 1958 that ZnS-Cu,Mn luminophore in a solid dielectric medium has a bright luminescence with a Mn band (λ_{max} = 580 m). Typical characteristics of the yellow luminophore are presented in Fig. 1. The authors conclude from these functions that the characteristics of luminescence of this layer are in organic relationship with those of layer conductivity. The same may be said of the green luminophore. The difference between yellow and green luminophore consists in that the yellow one, which attains a brightness of

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some millistilbs, has a brightness that is twice as strong as that of a green luminophore. From growth of brightness in trained specimens compared with untrained ones, the authors infer an increase of the effect of voltage upon the crystal. Since, however, the average voltage on the layer is not increased thereby, this is regarded as the consequence of another distribution of the voltage between crystal and layer. An electroluminescent layer may thus be regarded as a nonlinear resistor consisting of two layers with different degree of nonlinearity. The luminescence excited by the passage of current has a brightness depending upon the current itself, the nonlinearity of brightness being essentially dependent upon the nonlinearity of the resistor. Tests with voltage pulses have shown that on a voltage growth the peaks of brightness produced during the pulse front grow more slowly than brightness during the pulse duration. Π-shaped brightness waves are obtained with higher voltages. Finally, luminescence is examined under the simultaneous action of constant and alternating voltage. Two effects are indicated here, both of them leading to an increase of the integral brightness of the layer: amplification of the brightness peaks, and increase of brightness by the addition of constant luminescence. This phenomenon is very strongly marked in the yellow luminophore, but very

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weakly in the green one. Besides this additive amplification, a distinctly non-additive amplification of the luminescence peaks is also observed. This effect is stronger in the green luminophore than in the yellow one. The additive amplification of brightness in the yellow luminophore is in the range of 10^{-1} - 1 msb at a current density ranging between 10^{-5} and 10^{-3} a/cm^2. The non-additive amplification of the brightness of the green luminophore appears at about 10^{-2} msb and the corresponding current density range of 10^{-6} - 10^{-5} a/cm^2. With the aid of constant voltage, the brightness of green layers in an alternating field can be amplified several hundred times, and that of yellow layers more than ten times. F. M. Pekerman is thanked for his difficult work in preparing the luminophores, Z. A. Trapeznikova and her co-workers for supplying the luminophores, L. K. Tikhonova and A. V. Kapitonov for measurements. In the ensuing discussion, G. S. Kozina reports on the bright electroluminescence (first established by L. P. Poskacheyeva), observed on enamel with the green luminophore. The enamel layer with high luminophore concentration had a zinc oxide layer for an electrode. The other surface of the enamel layer was exposed to a constant electron current. The latter charged the layer

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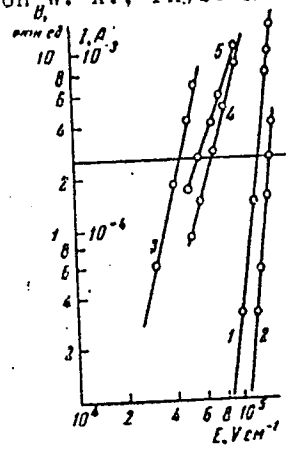
relative to the zinc oxide base, and a bright luminescence together with layer conductivity was observed at a given polarity of the voltage (plus on the zinc oxide layer). There are 3 figures and 6 references: 3 Soviet-bloc and 3 non-Soviet-bloc. The two references to English-language publications read as follows: Ref. 2: Taylor J. B., Alfrey G. F., Brit. J. Appl. Phys. Suppl., 4, 44 (1959). Ref. 6: Tornton W. A., Phys. Rev. 113, No. 5, 1187 (1959).



Legend to Fig. 1: Brightness (Curves 1, 4) and current (Curves 2, 5) as functions of the field strength for the Zn-Cu,Mn layer after training (1, 2), and prior to training (4, 5). Curve 3 represents the brightness in an alternating field.

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BAKUMENKO, V.L.; KOZINA, G.S.; FAVORIN, V.N.

Electroluminescent sublimated films of the luminophor ZnS-Cu, Mn. Opt. i spektr. 15 no.4:486-489 O '63. (MIRA 16:11)

L 4081-66 EWT(1)/T LJP(c) GG

ACC NR: AP5025797 SOURCE CODE: UR/0363/65/001/009/1588/1589

AUTHOR: Kozina, G. S.; Kovarskaya, Ye. S.; Salamatin, Ye. P. 44,55

ORG: none

TITLE: Effect of charge compensating Na ions on the distribution coefficient of neodymium in $CaWO_4$ single crystals grown by the Czochralski method

SOURCE: AN SSSR. Izvestiya. Neorganicheskiye materialy, v. 1, no. 9, 1965, 1588-1589

TOPIC TAGS: tungstate, calcium tungstate, neodymium, single crystal growing

ABSTRACT: The growing of $CaWO_4:Nd^{3+}$ single crystals has been studied. It is noted that for practical applications the concentration of activator centers in these crystals should be high. To increase this concentration, Na^+ ions were added to the melt. The experiments were conducted using varibus amounts of $CaWO_4$, Nd_2O_3, and Na_2WO_4 as starting materials. The dependence of neodymium concentration on the Na:Nd ratio was established. The mixtures were melted in Rh or Ir crucibles. The pulling rate was 10 mm/hr, the rotation velocity was 25 rpm, and the crystallization temperature was 1560—1640C. The study resulted in growing mixed $CaWO_4$-Na_2WO_4 single crystals activated with 0.25 to 3 at% Nd ions using Na/Nd ratios of 4, 8, 15, and 20 in the starting mixture. The results of the study given in Figs. 1 and 2 indicate that

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L 4081-66

ACC NR: AP5025797

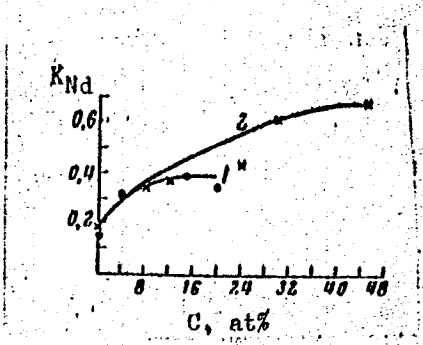

Fig. 1. Dependence of the distribution coefficient of neodymium on the concentration of sodium in the melt. Neodymium content in the melt:

1 - 1 at%; 2 - 2—3 at%.

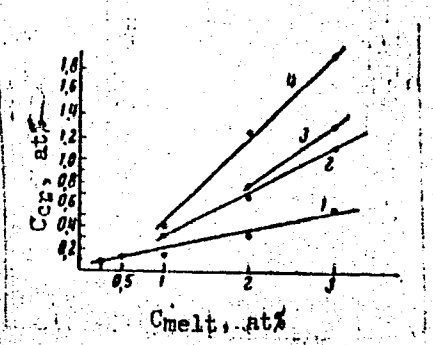

Fig. 2. Dependence of the neodymium concentration in the crystal (C_{cr}) on it concentration in the melt (C_{melt}). Na/Nd ratios:

1 - 0; 2 - 4; 3 - 8; 4 - 15.

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L 4081-66

ACC NR: AP5025797

addition of Na ions to the charge considerably increases the distribution coefficient, hence the concentration of activator centers in the crystals. Orig. art. has: 2 figures and 1 table. [BO]

SUB CODE: SS, IC/ SUBM DATE: 09Apr65/ ORIG REF: 000/ OTH REF: 001/ ATD PRESS: 4127

GVK

Card 3/3

L 1423-66 EWT(1) IJP(c)
ACCESSION NR: AP5021145 UR/0386/65/002/001/0027/0030

AUTHOR: Bakumenko, V. L.; Vlasov, A. N.; Kovarskaya, Ye. S.; Kozina, G. S.; Favorin, V. N.

TITLE: Step excitation of fluorescence in Er^{3+}-activated $CaWO_4$

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki. Pis'ma v redaktsiyu. Prilozheniye, v. 2, no. 1, 1965, 27-30

TOPIC TAGS: quantum counter, infrared quantum counter, quantum action, fluorescence, erbium doped oxide, erbium, radiation summation

ABSTRACT: Infrared quantum counter action has been discovered in Er^{3+}-doped (0.75%) $CaWO_4$ similar to that recently described by Brown and Shand in Er^{3+}-doped fluoride lattices (M. R. Brown, W. A. Shand, Phys. Rev. Lett., 12, 367, 1964). Fluorescence appeared at wavelengths of about 543 mμ when the wavelength of the first exciting flux corresponded to 1.5 μ and that of the second to 710—850 mμ. The effect can be produced only by the simultaneous application of the two fluxes. The same action was observed by the authors in Er^{3+}-doped (0.5%) $PbMoO_4$. According to the authors the effect may lead to the transformation of infrared radiation into visible light. Orig. art. has: 2 figures. [ZL]

Card 1/2

L 11423-66
ACCESSION NR: AP5021145

ASSOCIATION: none

SUBMITTED: 20May65 ENCL: 00 SUB CODE: SS, OP

NO REF SOV: 001 OTHER: 002 ATD PRESS: 4099

Card 2/2 OP.

L 4434-66 EWT(m)/EWP(t)/EWP(b) LJP(c) JD

ACC NR: AP5017903 UR/0051/65/019/001/0132/0132

621.375.9:53

AUTHOR: Bakumenko, V. L.; Kozina, G. S.; Kostinskaya, T. A.; Lupachev, Ye. P.; Rvacheva, Ye. S.

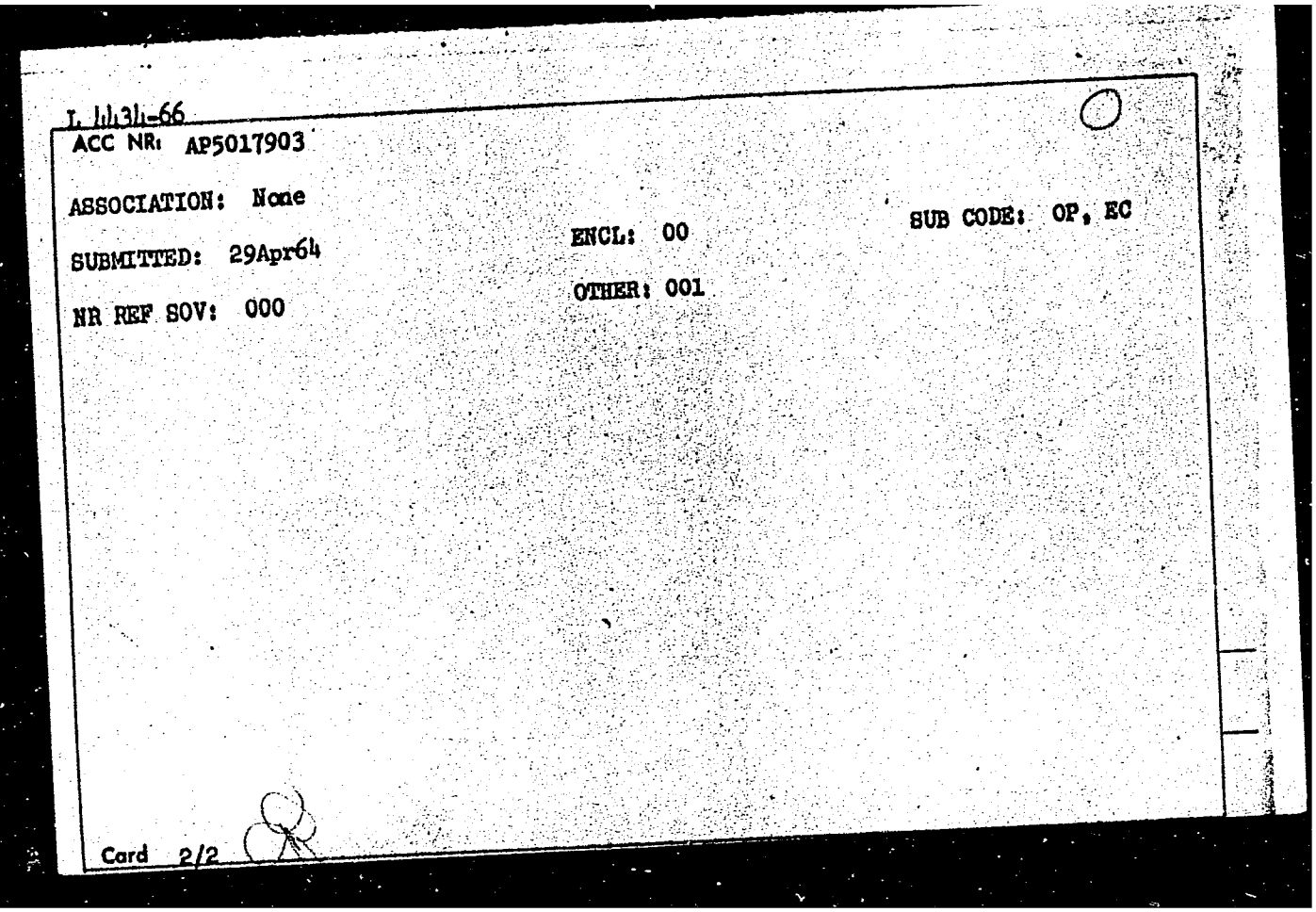
TITLE: Stimulated emission of praseodymium in calcium tungstate

SOURCE: Optika i spektroskopiya, v. 19, no. 1, 1965, 132, and both sides of insert facing p. 132

TOPIC TAGS: stimulated emission, praseodymium, calcium compound, solid state laser

ABSTRACT: The authors report that laser oscillation has been obtained in calcium tungstate crystals grown by the Czochralski method and activated with trivalent praseodymium ($CaWO_4$-Pr^{3+}). The oscillations were studied in cylindrical samples about 5 mm in diameter and 40 mm long, with plane-parallel silvered ends. The transmissivity of the semitransparent end was 0.5%. The pump source was a pulsed xenon lamp with maximum flash intensity 6 kJ). The stimulated emission was observed at a wavelength of 1.047 μ, corresponding to the $^1G_4 \rightarrow {}^3H_4$ transition and the temperature of liquid nitrogen. The threshold pump energy for this line was 12.8 J. The crystal output emission was recorded with a photomultiplier (FEU-28) feeding a pulse oscilloscope (OK-17M). The oscillograms exhibit a spike-like structure, with a peak energy of 30 W corresponding to the maximum spike amplitude. The emitted energy was 2 mJ. Orig. art. has: 3 figures.

Card 1/2



L 44341-66
ACC NR: AP5017903

ASSOCIATION: None

SUBMITTED: 29Apr64

NR REF SOV: 000

ENCL: 00

OTHER: 001

SUB CODE: OP, EC

Card 2/2

S/032/60/026/012/003/036
B020/B056

AUTHORS: Yakovlev, P. Ya. and Kozina, G. V.

TITLE: Potentiometric Determination of Boron in Steels and Alloys

PERIODICAL: Zavodskaya laboratoriya, 1960, Vol. 26, No. 12, pp. 1342-1343

TEXT: A potentiometric method was used to determine boron in steel and alloys, which is based upon the usual titration of boric acid together with invert sugar with NaOH. For this purpose a Soviet potentiometer ЛП-5 (LP-5) with a glass- and a saturated calomel electrode was used; titration was made in an open vessel. To remove the cations disturbing during potentiometric titration, the cationite КУ-2 (KU-2), and for the removal of Fe, Ni, Cr, Mn etc., 20% NaOH was used. The solutions containing boron were boiled for 5 minutes in an open conical flask without the results of the analyses being changed. The method was checked on boron-free steel solutions, to which a standard boric acid solution had been added. The results obtained by checking the potentiometric determination of boron in chrome nickel steels are given in Table 1. Aluminum was bound in form of a stable citrate complex. The presence of V or Mo in the alloy does not

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Potentiometric Determination of Boron in Steels and Alloys

S/032/60/026/012/003/036
B020/B056

disturb. A boron determination according to this method takes 1.5 hours. The course of analysis is exactly described. Yu. M. Kostrikin and V. A. Korovin (Ref. 3) as well as Sh. K. Ashratova (Ref. 4) are mentioned. There are 2 tables and 4 references: 3 Soviet and 1 US.

ASSOCIATION: Tsentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii im. I. P. Bardina (Central Scientific Research Institute of Ferrous Metallurgy imeni I. P. Bardin)

Card 2/2

YAKOVLEV, P.Ya.; KOZINA, G.V.

Potentiometric determination of boron in ferroboron. Sbor. trud. TSNIICHM no.24:179-184 '62. (MIRA 15:6)
(Iron-boron alloys--Analysis) (Boron analysis)
(Potentiometric analysis)

YAKOVLEV, P.Ya.; KOZ'INA, G.V.

Methods for determining boron in steels and alloys (survey). Zav. lab. 29 no.8:920-922 '63. (MIRA 16:9)
(Boron—Analysis) (Steel—Analysis)

YAKOVLEV, P.Ya.; KOZINA, G.V.

Determining boron in the presence of fluorine in a chloric chromium electrolyte. Sbor.trud. TSNIICHM no.31:173-174 '63. (MIRA 16:7)
(Electrolytes--Analysis) (Boron--Analysis)

77434
SOV/130-60-1-17/22

18.7100

AUTHORS: Avdeyeva, V. D., Dyskin, A. M., Kozina, G. Ya.

TITLE: Elimination of Transverse Cracks During Heating of Ball-Bearing Steel

PERIODICAL: Metallurg, 1960, Nr 1, p 39 (USSR)

ABSTRACT: Based on the experience at the Combine imeni A. K. Serov (Kombinat imeni A. K. Serova) in rolling ball-bearing steel ingots on an 850 mill, the Central Plant Laboratory (TsZL) established that preliminary tempering of cold ingots at 680° C combined with heating of ingots in the soaking pit (with temperature of heating chambers not higher than 200° C) decreased rejects from transverse cracks from 6.5 to 0.1-03%.

ASSOCIATION: Metallurgical Combine imeni A. K. Serov (Metallurgicheskiy imeni A. K. Serova)

Card 1/1

ZAL'TSBERG, M., inz.; KOZINA, I., inzh.

Continuous automatic concrete mixing unit. Bud.mat.i konstr. no.5:13-16 S-O '62. (MIRA 15:11)
(Automatic control) (Concrete mixers)

Kozina, J.

Kozina, J. Combustion control of solid and liquid fuels according to Ostwald's universal diagram. p.226.

Vol. 36, No. 7, July 1956
PALIVA
TECHNOLOGY
Czechoslovakia

So. East European Accessions, Vol. 6, No. 5, May 1957

CZECHOSLOVAKIA / Chemical Technology. Chemical Products and Their Application. Chemical Processing of Solid Fossil Fuels. H-22

Abs Jour: Ref Zhur-Khimiya, No 1, 1959, 2507.

Author : Kozina, I.
Inst : Not given.
Title : The Practice of Storing Blast Furnace Gas in the Gas Holder MAN System.

Orig Pub: Paliva, 1956, 36, No 11, 365-370.

Abstract: An examination is made on the difficulties encountered in operating dry gas holders of the MAN system in the winter months, particularly during storing therein of a moist, dust-contaminated blast furnace gas. A method is described for a steam heating of an oil seal in the gas holder containing gas, which /method/ provides

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CZECHOSLOVAKIA / Chemical Technology. Chemical Products and Their Application. Chemical Processing of Solid Fossil Fuels. H-22

Abs Jour: Ref Zhur-Khimiya, No 1, 1959, 2507.

Abstract: a continuous operation at temperatures to - 30°C. Practical considerations as to the location of gas holders construction, their dimensions and constructive improvements are cited. -- K. Zarembo.

Card 2/2

KOZLNA, J.

M. Havelka's Plynojemy v hutich (Gasholders in Metallurgic Works); a book review. p. 116. (Paliva, Vol. 37, No. 3, Mar 1957, Praha, Czechoslovakia)

SO: Monthly List of East European Accessions (EEAL) LC, Vol. 6, No. 8, Aug 1957. Uncl.

KOZINA, Jan, inz.

Czechoslovak servomechanical line recorder. Automatizace 6 no.4: 97-100 Ap '63.

1. Vyzkumny a zkusebni ustav, Nova hut Klementa Gottwalda, Ostrava - Kuncice.

KOZINA, Lotar, inz.

Statistical control in the Maribor Plants of Automobiles and Engines. Bases, methods, ways and means for the introduction. (To be contd.) Stroj vest 8 no.3:Suppl.: TAM 8 no.3:87-90 Je '62.

1. Tovarna avtomobilov in motorjev, Maribor.

KOZINA, Lotar, inz.

Statistical control in the Automobile and Engine Factory of Maribor. Stroj vest 8 no.4/5:137-138 0 '62.

1. Statistična kontrola Tovarne automobilov, Maribor

TUR'YAN, Ya.I.; KOZINA, L.N.

Amperometric titration of vinyl monomers. Zhur. anal. khim. 18 no.9:1120-1124 S '63. (MIRA 16:11)

1. Scientific-Research Institute of Monomers for Synthetic Rubber, Yaroslavl.

SAMAN, K;KOZINA, M.

Conservative treatment of ocular burns with acetylcholine and priscoline. Cesk. ofth. 8 no.2:114-118 Mar 1952. (CLML 22:2)

1. Of the Eye Clinic (Head-- Prof. R.Knobloch, M. D.) in Pilsen.

KOZINA, M., MUDr

Hazard to the vrystalline lens during the treatment of eye diseases with roentgen rays. Cesk. ofth. 10 no.3:167-170 Je '54.

1.Z ocni kliniky v Plzni (prednosta prof. Dr R Knobloch.)
(EYE, diseases,
*ther., x-ry, eff. on crystalline lens)
(CRYSTALLINE LENS, effect of radiations on,
*x-ray, in ther. of eye dis.)
(RADIOTHERAPY, in various diseases,
*eye dis., eff. on crystalline lens)

KOZINA, M.; KUHNEL, O.

Possibility of identification of copper intra-ocular foreign body by chemical means. Cesk. ofth. 14 no.5:371-374 Oct 58.

1. Ocni klinika Karlovy university v Plzni, prednosta prof. Dr. R. Knobloch. K. M., ocni klinika, Plzen.

(EYE, foreign bodies
copper, identification by chem. means (Cz))
(COPPER
copper intra-ocular foreign body, identification by chem. means (Cz))

SHEYNBERG, S.I.,; KOZINA, M.G.,; NAGAYEVA, L.I.,; MFROS, G.A.

Improvement in the design of vascular suturing apparatus. Med. prom. 10 no.1:30-34 Ja-Mr '56. (MLRA 9:6)

1. Nauchno-issledovatel'skiy institut eksperimental'noy khirurgicheskoy apparatury i instrumentov.
(SURGICAL INSTRUMENTS AND APPARATUS)

KOZINA, M.G. (Moskva, B-66, ul. Novaya Basmannaya, d.15, kv. 8)

Hemostatic clamps for applying ligatures in deep wounds. Nov.khir. arkh. no.2:114-115 Mr-Ap '58 (MIRA 11:6)

1. Nauchno-issledovatel'skiy institut eksperimental'noy khirurgicheskoy apparatury i instrumentov Ministerstva zdravookhraneniya SSSR.
(SURGICAL INSTRUMENTS AND APPARATUS)

KOCHIASHVILI, V.I., kand.med.nauk; KOZINA, M.G., starshiy inzhener

Some details of the technic for applying a pancreatic-intestinal anastomosis in resection of the pancreas. Khirurgiia no.3:28-33 '62. (MIRA 15:3)

1. Iz kliniki fakul'tetskoy khirurgii (zav. - prof. A.A. Busalov) pediatricheskogo fakul'teta II Moskovskogo gosudarstvennogo meditsinskogo instituta imeni N.I. Pirogova i Nauchno-issledovatel'skogo instituta eksperimental'noy khirurgicheskoy apparatury i instrumentov (dir. - dotsent M.G. Anan'yev).
(PANCREAS—SURGERY) (INTESTINES—SURGERY)

KOZINA, M.P.

3

Mechanism of the catalytic action of aluminosilicate catalysts. G. D. Lyubarskii and M. P. Kozina. *Problemy Kinetiki i Kataliza, Akad. Nauk S.S.S.R. Otdel. Obshchei i Prikladnoi Khimii*, 273-80(1949).—Since highly purified gels of Al_2O_3 and SiO_2 are not electrolytes and have no cataphoretic charge, they should be unable to act as proton donors in catalyzing the cracking of hydrocarbons. Both gels, as well as a mixt. of the gels, were purified by electrodialysis until their cond. decreased to 1.7×10^{-6} mhos. The gels retained their specific porosity and surface area. The purified catalyst was found to be inactive for cracking of isopropylbenzene at 400-60° with a contact time of 5 sec.; some activity developed at a later stage. After regeneration with air, the induction period reappeared again. Very small amts. of acids restored the activity of the dialyzed catalysts. The restored activity was not impaired by evacuation to 10^{-4} mm. Hg at 560° for 6 hrs. Aluminosilicate catalysts could also be made inactive by treatment with caustic. In one case complete poisoning was reached at a concn. of 10^{-5} g. equiv. caustic/g. of catalyst. The activation energy changed from 14 kcal. for the nonpoisoned catalyst to 21 kcal. after caustic poisoning, indicating that the poisoning is not caused merely by a decrease of the active surface, but by gradual and selective neutralization of the active centers. The activity of the poisoned catalyst could be restored by treatment with an equiv. amt. of acid, but not by washing with H_2O. Similar poisoning and restoration was observed also in the case of catalytic dehydration of EtOH on the aluminosilicate catalysts. Thus, adsorbed acids are responsible for the catalytic activity of these catalysts. Andrew Dravnieks

1

KOZINA, M. P.

KOZINA, M. P. -- "The Heat of Combustion of Certain 5- and 6-Member Heterocyclic Compounds." Moscow State U imeni M. V. Lomonosov. Chemistry Faculty. Moscow, 1955. (Dissertation for the Degree of Candidate in Chemical Science).

SO Knizhnaya letopis'
No 2, 1956.

Kozina, M.P.

20-3-26/52

AUTHORS: Skuratov, S. M. , Strepikheyev, A. A. (Deceased), Kozina, M. P.

TITLE: The Reactivity of 5- and 6-Member Heterocyclic Compounds (O reaktsionnoy sposobnosti pyati- i shestichlennykh geterotsiklicheskikh soyedineniy)

PERIODICAL: Doklady AN SSSR, 1957, Vol. 117, Nr 3, pp. 452 - 454 (USSR)

ABSTRACT: The enthalpy on the cyclization can characterize the reactivity of a given cyclic compound in the well known manner during its transformation into linear compounds. The main problem of this paper is to extend the conclusion drawn to γ - and δ -monosaccharides the polymerization of which may play an important part in the biosynthesis of natural compounds. Besides, it was possible, in this paper, to clear up several other interesting problems. The enthalpy of the cyclization of a given cyclical compound can be computed in two ways: 1.) By comparing the experimentally determined combustion heat of this compound with its combustion heat added up from the increments of the corresponding groups. 2.) By comparing the combustion heat of the 5-member and 6-member compounds of a given series. For the determination of the enthalpy of cyclization of the 5-member cycle a formula is given. The experimentally determinable quantities are the combustion heats of the respective

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The Reactivity of 5- and 6-Member Heterocyclic Compounds

compounds. The calorimetric apparatus and the method for measuring the combustion heats have already been described (reference 6). The combustion heats of all investigated substances are shown in a table. The data obtained allow, among others, the following conclusions: The enthalpy of the cyclization of a 6-member cycle is nearly equal to zero, but for a 5-member cycle this enthalpy is $\sim$ 5 cal. The authors intended to verify the method on any pure hydrocarbon (or a substance of similar structure); for this purpose they selected αd-glucose. Quite simple additive methods of computation may be applied in the case of the class of hydrocarbons. It may be assumed that in hydrocarbons the enthalpy of the cyclization of a 6-member cycle is nearly equal to zero. This permits estimation of the enthalpy of the cyclization of a 5-member cycle of ßd-CH_3-glucofuranocide by comparing its combustion heat with that of the 6-member cycle of the ßd-CH_3-glucopyranocide. There are 1 table and 14 references, 4 of which are Slavic.

Card 2/3

20-3-26/52

The Reactivity of 5- and 6-Member Heterocyclic Compounds

ASSOCIATION: Moscow State University imeni M. V. Lomonosov
(Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova)

PRESENTED: May 25, 1957, by A. A. Balandin, Academician

SUBMITTED: May 16, 1957

AVAILABLE: Library of Congress

Card 3/3

AUTHORS: KOZINA M. P
Balandin, A. A., Klabunovskiy, Ye. I., Kozina, M.P., Ul'yanova, O. D. 62-1-3/29

TITLE: Thermochemical Detection of the Energies of Compounds (Termokhimicheskoye opredeleniye energiy svyazey). Report 1: The Energies of the Compounds Sn - C in Tetramethyl and Tetraethyl Tin (Soobshcheniye 1. Energii svyazey Sn - C v tetrametil- i tetraetilolove)

PERIODICAL: Izvestiya AN SSSR Otdeleniye Khimicheskikh Nauk, 1958, Nr 1, pp 12-17 (USSR)

ABSTRACT: The data in technical literature concerning the energies of compounds (used in the computation of the adsorption potentials of the catalysts) are insufficient. Above all no publication gives concrete data on the energies of the compounds C,H,O,N with elements belonging to the composition of the most important catalysts. Therefore it was important to start a systematical investigation of the compound energies necessary for the catalysis also by thermo-chemical way. In the present paper the authors report on the detection of the combustion heat of tetramethyl- and tetraethyl-tin, the heat formation from elements, and the energies of the compound Sn - C (tables 1 and 2). The found data give more precise

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Thermochemical Detection of the Energies of Compounds
Report 1: The Energies of the Compounds Sn - C in Tetramethyl and Tetraethyl Tin

62-1-3/29

rules governing the homologous series than do those hitherto found by researchmen. Furthermore it was shown that the applied calorimetric methods can also be used for the detection of the combustion heat of the metal-organic compounds with rather great preciseness. (Tables 3,5,6). Furthermore each investigated compound demands a special approach to the methods of its combustion, and therefore it is necessary to carry out numerous preliminary experiments. Furthermore the spectrum of the combination dispersion of tetraethyl-tin was detected for the first time. There are 6 tables and 24 references, 7 of which are Slavic.

ASSOCIATION: Institute of Organic Chemistry imeni N. D. Zelinskiy, AS USSR and State University imeni M. V. Lomonosov, Moscow (Institut organicheskoy khimii imeni N. D. Zelinskogo Akademii nauk SSSR i Moskovskiy gosudarstvennyy universitet imeni M. V. Lomonosova)

Card 2/2

1. Metalorganic compounds-Combustion 2. Compounds-Energy measurement 3. Calorimeters Applications 4. Tetramethyl-tin-Thermochemistry 5. Tetraethyl-tin-Thermochemistry

5(4) SOV/2o-122-1-3o/44

AUTHORS: Skuratov, S. M., Kozina, M. P.

TITLE: The Combustion Heat of Tetrahydropyrane (Teplota goreniya tetragidropirana)

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol 122, Nr 1, pp 1o9-11o (USSR)

ABSTRACT: In the Thermochemical Bulletin 1957, Nr 3, the values of the combustion heat of tetrahydrofuran and tetrahydropyrane were published. (These values were found in an English and in a Soviet Laboratory). For tetrahydrofuran, the difference between the results of the 2 laboratories is relatively small, but it amounts to 0,5 % for tetrahydropyrane. Such a difference cannot be explained by the errors of the calorimetric measurements, but it is caused, evidently, by the insufficient purity of the substance. Therefore, English authors and the authors of this paper decided to repeat the measurements of the combustion heat of tetrahydropyrane. The value found by English authors was practically equal to that published in the Thermochemical Bulletin. This paper, however, gives the results of the repeated determina-

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tion of the combustion heat of tetrahydropyrane. This substance was purified in various ways. The combustion heats of these samples were equal within the limits of experimental errors. The results of this paper are given in a table. According to these results, the tetrahydropyrane investigated by the authors may be considered as being sufficiently pure. There are 1 table and 2 references, 1 of which is Soviet.

PRESENTED: June 30, 1958, by A. N. Frumkin, Academician

SUBMITTED: July 1, 1958

5(3,4)

AUTHORS: Kozina, M.P., Skuratov, S.M. SOV/20-127-3-22/71

TITLE: The Polymerization Enthalpy of N-Substituted Lactams.

PERIODICAL: Doklady Akademii nauk SSSR,1959, Vol 127, Nr 3,pp561-563 (USSR)

ABSTRACT: Up to now there existed no experimental data which would have made it possible to explain the differing polymerizability of heterocyclic compounds of a certain homologous series. Several authors explain this phenomenon by the alteration of the enthalpy and entropy in the reactions concerned. The alteration of the enthalpy in the polymerization process can be determined rather easily as the difference between the combustion heat of the monomer and a polymer link (the latter value can be calculated most reliably in many cases). The whole matter is much more complicated as far as the entropy values are concerned: there are hardly any experimental results for the corresponding substances, while the efforts of determining them by computation do not always yield reliable values. However, the variation of the entropy of polymerization reactions of carbocyclic compounds with 5-8 links is not

very high (for example for ε-caprolactam, Ref 4). The thermo-dynamic potential on the whole is determined by the alteration of the enthalpy (Δ H). Thus the investigation of the combustion heat and the calculation of the enthalpy alteration from it, is not useless, although there exist no data on entropies. At present the authors estimated the Δ H values of the polymerization reactions of lactams with 5 to 8 links in the cycle. As is known, even a substituent of the C-atom reduces the polymerizability of a compound (Ref 5). The polymerization of amides is even more reduced by a substituent of the nitrogen atom. It was even said that N-substituted lactams cannot be polymerized at all (Ref 6). After it was found that N-methyl-enantholactam can be polymerized (Ref 7), it was interesting to obtain data on the Δ H of the polymerization reaction of methyl-substituted lactams with 5-8 links in the cycle. The present paragraph gives determination results of the combustion heat of N-methyl-caprolactam, N-methyl-enantholactam and N-methyl-ethyl-propion-amide. The combustion heat of the latter was used for computations. The synthesis and the purification of the mentioned substances was carried out in the Institut

iskusstvennogo volokna (Institute for Synthetic Fibres) by N. F. Yerofeyeva. Their physico-chemical constants are shown by table 1. The fourth column gives the enthalpies of isothermal (25°) combustion in liquid state with 1 atm. All enthalpies under discussion were determined from them. Table 2 shows a comparison of the ΔH_n-values of N-methyl-substituted lactams with the ΔH_n-values determined earlier in the same way, (Ref 1), for the non-substituted lactams with the same number of links in the cycle. The results prove that no polymerization takes place in either series of the compounds with enthalpies below 3.9 kcal/mol under the conditions mentioned above. There are 2 tables and 11 references, 8 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova (Moscow State University imeni M. V. Lomonosov)

PRESENTED: April 4, 1959, by A. A. Balandin, Academician

SUBMITTED: March 30, 1959

28290

S/076/61/035/010/009/015
B106/B101

11.1210
11.0132

AUTHORS: Kozina, M. P., Skuratov, S. M., Shtekher, S. M., Sosnina, I. Ye., and Turova-Polyak, M. B.

TITLE: Combustion heats of some bicyclanes

PERIODICAL: Zhurnal fizicheskoy khimii, v. 35, no. 10, 1961, 2316-2321

TEXT: The authors determined the combustion heats of some bicyclic hydrocarbons with rings of 5, 6, and 7 members at 25°C. Only one series of publications exist on this subject which did not indicate either the measuring methods applied or the dependability of the results obtained (Ref. 3: (a) J. A. Goodman a. P. H. Wise, J. Amer. Chem. Soc., 73, 850, 1951; (b) K. T. Serijan a. P. H. Wise, J. Amer. Chem. Soc., 73, 4766, 5191; 74, 365, 1952; (c), (d) see below). The following hydrocarbons were examined: dicyclopentyl, dicyclopentyl methane, cyclopentyl cyclohexane, cyclopentyl cycloheptane, dicycloheptyl, trans-β-methyl decalin. The hydrocarbons were purified chromatographically on silica gel of the type KCM(KSM), then subjected to fractional vacuum distillation and finally subjected to chromatography on silica gel for another 2 or 3 times. Their

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Combustion heats of some ...

purity was determined by a cryoscopic method developed by A. G. Anikin, Ya. I. Gerasimov, and G. M. Dugacheva (Ref. 8: Dokl. AN SSSR, 110, 576, 1950). The calorimetric bomb used (Fig. 2) was designed by the thermokhimicheskaya laboratoriya MGU (Thermochemical Laboratory of Moscow State University), and had the following advantages as compared to other types of bombs: lower thermal inertness, simple and dependable valve construction for introducing and removing the gases, and insulated ignition wires resistant to the flame of the burning substance. The bomb was filled with oxygen free from combustion impurities to a pressure of 30 atm. Temperature of the calorimeter was measured by a specially designed thermometer allowing readings of an accuracy of 0.0002°C. Correction for the heat exchange was calculated according to the formula by Regnault-Pfaundler-Usov, and did not exceed % of the temperature ascent. The caloric value of the calorimeter system was determined by burning benzoic acid produced by the Vsesoyuznyy nauchno-issledovatel'skiy institut metrologii im. D. I. Mendeleyeva (All-Union Scientific Research Institute of Metrology imeni D. I. Mendeleyev). The weight of the burned substance was found by determining the quantity of carbon dioxide produced by combustion. Carbon dioxide was absorbed by ascarite and its quantity determined by weighing

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the absorption vessel. Accuracy of this method of CO_2 determination was ± 0.02%. Table 4 shows the results of determinations. By comparing the data obtained with the known values for the combustion heat of the corresponding monocyclanes (Ref. 13: Sj. Kaarsemaker a. J. Coops, Rec. trav. chim., 71, 261, 1952) and of trans-decalin (Ref. 14: G. F. Davies a. E. C. Gilbert, J. Amer. Chem. Soc., 63, 1585, 1941) the following relations could be established: combustion heat of any bicyclane consisting of rings with more than 4 carbon atoms:

$\Delta H^{25}_{comb} = \Delta H' + \Delta H'' + 60.1$ kcal/mole ($\Delta H'$, $\Delta H''$ = combustion heats of monocyclanes constituting the corresponding bicyclane; 60.1 kcal/mole = reaction enthalpy for forming a molecule of bicyclane and a molecule of hydrogen from 2 molecules of the corresponding monocyclanes); combustion heats of trans-β-alkyl decalins (for nonramified alkyl radicals):

$\Delta H^{25}_{comb} = 1500.3 + 154.2 + (n-1)\cdot 156.2$ kcal/mole (1500.3 = combustion heat of trans-decalin; 154.2 = increment of the CH_2 group directly bound to the ring; 156.2 = increment for a CH_2 group in the nonramified alkyl radical;

n = number of carbon atoms in the alkyl radical); combustion heats of bicyclanes separated by a methylene group, i.e., compounds of the type $X^1-CH_2-Y^1$ (X^1, Y^1 = radicals of the correspodning monocyclanes):

$-\Delta H^{25}_{comb} = (\Delta H_X + \Delta H_Y) - 60.1 + 155.3$ kcal/mole (ΔH_X, ΔH_Y = combustion heats of the corresponding monocyclanes; 155.3 = increment of the CH_2 group bound to two rings); isomerization enthalpies for the liquid state at 25°C: dicyclopentyl to trans-decalin ($\Delta H^1_{is} = -13.2$ kcal/mole); cyclopentyl cyclohexane to trans-β-methyl decalin ($\Delta H''_{is} = 8.2$ kcal/mole); dicyclopentyl methane to trans-β-methyl decalin ($\Delta H'''_{is} = -14.3$ kcal/mole).

There are 2 figures, 4 tables, and 15 references: 6 Soviet and 9 non-Soviet-bloc. The three most recent references to English-language publications read as follows: J. B. Greenshields a. F. D. Rossini, J. Res. Nat. Bur. Standards, 62, 271, 1958; Ref. 3: (c) R. M. Caves, R. L. McLaughlin a. P. H. Wise, J. Amer. Chem. Soc., 76, 922, 1954; (d) J. H. Lamneck, jr, a. P. H. Wise, J. Amer. Soc., 76, 5108, 1954.

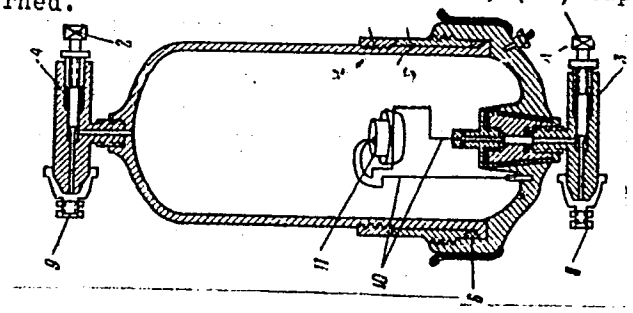
Card 4/6

Combustion heats of some ...

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova (Moscow State University imeni M. V. Lomonosov)

SUBMITTED: February 25, 1960

Fig. 2. Cross section of the calorimetric bomb. Legend: (1), (2) conical valves for introducing and removing the gas; (3), (4) stuffing boxes; (5) sleeve nut for sealing the bomb; (6) rubber packing ring; (7) threaded ring to keep packing tight, when pressure drops to 1 atm in the bomb; (8), (9) connecting terminals; (10) ignition wires; (11) cup holding the substance to be burned.



Card 5/6

KOZINA, M.P.; LUKINA, M.Yu.; ZUBAREVA, N.D.; SAFONOVA, I.L.; SKURATOV, S.M.; KAZANSKIY, B.A., akademik

Heat of combustion of some phenylcyclopropanes. Dokl.AN SSSR 138 no.4:843-845 Je '61. (MIRA 14:5)

1. Moskovskiy gosudarstvennyy universitet imeni M.V.Lomonosova i Institut organicheskoy khimii imeni N.D.Zelinskogo AN SSSR.
(Benzene) (Heat of combustion)

L 15702-65 EPA/EPA(s)-2/EWT(m)/EPF(c)/EPR/EWP(j)/T Pc-4/Paa-2A Pr-4/
Ps-4/Pt-10/Pi-4 AEDC/ASD-3/AFFTC/SSD/AFGC/RPL/AEDC(a)/AFWL/ASD(p)-3
BW/WW/JW/JWD/WE/RM

ACCESSION NR: AP4044076 S/0189/64/000/004/0003/0006

AUTHORS: Goroshko, N.N.; Kozina, M.P.; Skuratov, S.M.; Belikova, N.A.; Plate, A.F.

TITLE: Heats of combustion of exo-and endo-isomers-- 2-cyano-bicyclo-(2,2,1)heptane

SOURCE: Moscow.Universitet. Vestnik. Seriya. Khimiya, no. 4, 1964, 3-6

TOPIC TAGS: bicycloheptane derivative, cyano bicyclo heptane, endo isomer, exo isomer, heat of combustion, heat of isomerization, enthalpy, plastic crystal

ABSTRACT: The heats of combustion of the exo and endo isomers and the heat of isomerization ($\Delta H_{exo \rightarrow endo}$) of 2-cyano-bicyclo-(2,2,1)-heptane were determined in the Moscow State University Thermochemical Laboratory (v termokhimicheskoy laboratorii MGU) study of the thermodynamic properties of bicyclo-(2,2,1)heptane derivatives, of interest because of their high symmetry suitable for forming "plastic

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Card 1/2 interest because of their high symmetry suitable for forming "plastic

L 15702-65

ACCESSION NR: AP4044076

crystals". The enthalpy for the exo-isomer, calculated at initial bomb pressure of 1 atm; $-\Delta H^{25^\circ}_{298}$ = 1132.44 ± 0.31 kcal/mol, and for the endo- isomer, $-\Delta H^{25^\circ}_{298}$ = 1132.98 ± 0.35 kcal/mol. The heat of isomerization was calculated at 76.80, at which temperature both isomers were liquid. $\Delta H^{76.8^\circ}_{exo}$ = 1130.09 ± 0.31 and $\Delta H^{76.8^\circ}_{endo}$ = 1131.05 ± 0.35 kcal/mol; exo ⟷ endo heat of isomerization = -0.96 ± 0.44 kcal/mol. Orig. art. has: 3 tables.

ASSOCIATION: MGU Kafedra fizicheskoy khimii (Moscow State University Department of Physical Chemistry)

SUBMITTED: 03Mar64 DATE ACQ: ENCL: 00

SUB CODE: TD, GC NR REF SOV: 004 OTHER: 004

Card 2/2

KOZINA, M.P.; MIRZAYEVA, A.K.; SOSNINA, I.ye.; YELAGINA, N.V.; SKURATOV, S.M.; Prinimal uchastiye LYU TSZIN'-SYAN [Liu Chin-hsiang] (Koreyskaya Narodnaya Respublika

Heat of formation of spirocyclane hydrocarbons. Dokl. AN SSSR 155 no. 5:1123-1125 Ap '64. (MIRA 17:5)

1. Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova. Predstavleno akademikom B.A.Kazanskim.

KOZINA, M.P.; SHIGORIN, D.N.; SKOLDINOV, A.P.; SKURATOV, S.M.

Thermochemical determination of the stabilization energy for a quasiaromatic ring with an H-bond. Dokl. AN SSSR 160 no.5:1114-1116 F '65. (MIRA 18:2)

1. Moskovskiy gosudaratvennyy universitet i Fiziko-khimicheskiy institut im. L.Ya. Karpova. Submitted August 18, 1964.

GULIYEV, M.A.; KOLOMAKIN, G.A.; IVANOVA, K.V., veter.vrach; KOZINA, M.S., veter. vrach; SMIRNOVA, M.M., laborant

Diagnosis of rabies. Veterinariia 41 no.10:89-91 O '64. (MIRA 18:11)

1. Zaveduyushchiy otdelom virusologii Gruzinskoy respublikanskoy veterinarnoy laboratorii. (for Guliyev). 2. Direktor Alma-Atinskoy oblastnoy veterinarnoy laboratorii (for Kolomakin). 3. Alma-Atinskaya oblastnaya veterinarnaya laboratoriya (for Ivanova, Kozina, Smirnova).

KOZINA, N. A.

USSR/Engineering - Metallurgy

Card 1/1 : Pub. 22 - 10/41

Authors : Arkharov, V. I.; Berenova, I. P.; and Kozina, N. A.

Title : Revealing inner intercrystal adsorption in aluminum alloys by the microhardness method

Periodical : Dok. AN SSSR 98/2, 207-209, Sep 11, 1954

Abstract : Experiments helping to reveal the inner intercrystal adsorption in aluminum alloys by the microhardness method are described. One reference (1946). Graphs.

Institution : ...

Presented by : Academician I. P. Bardin, April 17, 1954

GOLYAYEV, A.F.; [illegible], O.A.; KHRAMTSOV, V.N.

Observations of right ascensions of the sun, Mercury and Venus with the new meridian circle at the Pulkovo Observatory. Soob. GAISH no.134:21-23 '64. (MIRA 17:8)

6(4), 7(7) SOV/108-13-12-8/12

AUTHORS: Kozina, O. G., Frantsuzov, A. A.

TITLE: On Selective RC Amplifiers (Ob izbiratel'nykh RC-usilitelyakh)

PERIODICAL: Radiotekhnika, 1958, Vol 13, Nr 12, pp 64-71 (USSR)

ABSTRACT: The behavior of a selective amplifier with a double T-bridge in the feedback circuit with little variations of the bridge parameters (especially the influence of the parameters on the self excitation) is investigated. A new circuit diagram for the feedback connection is given. The calculation of the amplifier with respect to the finite size of the leakage and load resistance is carried out. The results of calculation are checked by experiments. The calculated results agree with the measurements within the limits of measuring accuracy. There are 11 figures, 1 table, and 3 Soviet references.

SUBMITTED: March 8, 1957 (initially) and March 11, 1958 (after revision)

Card 1/1

KOZINA, O.G.; MAKAROV, G.I.

Transients in acoustic fields generated by a piston membrane of arbitrary shape with arbitrary surface vibrations. Akust. zhur. 7 no.1:53-58 '61. (MIRA 14:4)

1. Leningradskiy gosudarstvennyy universitet.
(Sound)

S/046/62/008/001/006/018
B125/B102

AUTHORS: Kosina, G. G., Makarov, G. I.

TITLE: Transition processes in the acoustic fields of piston membranes of different concrete shapes

PERIODICAL: Akusticheskiy zhurnal, v. 8, no. 1, 67 - 71 1962

TEXT: The transition processes in an acoustic field for circular, quadratic, and triangular membranes are studied by the authors' own theoretical methods (Akust. zh., 1961, 7, 1, 53 - 58). For a circular diaphragm the point of observation is either outside the cylinder whose basal plane lies on the membrane or on the axis of this cylinder. In the former case the equations of the fore and rear fronts are $ct_5 = \sqrt{z^2 + (x-a)^2}$ (3) and $ct_r = \sqrt{z^2 + (x+a)^2}$, respectively. The field of a circular membrane is

$$P_1 = \frac{\rho c}{\sqrt{2\pi}} \sqrt{\frac{a}{x}} \frac{ct_5}{x-a} \frac{1}{\sqrt{\omega t_5}} N\left(2\sqrt{\frac{c\Delta t_5}{\lambda}}\right) \sin\left[\omega\Delta t_5 - \xi\left(2\sqrt{\frac{c\Delta t_5}{\lambda}}\right)\right]. \quad (8)$$

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The separation of the first half-wave from the one following is characteristic of the lateral fields of membranes of any shape. The pressure in the lateral field is $P_1 - P_2$ where P_2 is

$$P_2 = \frac{\rho c}{\sqrt{\pi}} \sqrt{\frac{a}{x}} \frac{ct_\beta}{x+a} \frac{1}{\sqrt{\omega t_\beta}} A\left(2\sqrt{\frac{c\Delta t_\beta}{\lambda}}\right) \sin\left[\omega \Delta t_\beta + \varphi\left(2\sqrt{\frac{c\Delta t_\beta}{\lambda}}\right)\right],$$

$$A(x) = \sqrt{1 + N^2 - 2N\cos\left(\xi - \frac{\pi}{4}\right)}$$

$$\varphi = \operatorname{arctg} \frac{\frac{1}{\sqrt{2}} - N\sin\xi}{\frac{1}{\sqrt{2}} - N\cos\xi},$$

At P_1 and P_2 $N(x) = \sqrt{2}\sqrt{C^2(x) + S^2(x)}$, $\xi(x) = \operatorname{arctg}(S(x)/C(x))$ and Δt_β is the distance of the point of observation from the rear front. The stationary diagram is formed in the neighborhood of the rear front. If the normal component $U_z(t)$ of the velocity is given,

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$P = \rho c \left[U(t - \frac{r}{c}) - U(t - \frac{\sqrt{r^2 + a^2}}{c}) \right]$ (13). The pressure change on the membrane axis corresponding to $U_2(t) = 1$, $t > 0$; $U_2(t) = 0$, $t < 0$ is illustrated in Fig. 5. If the membrane is excited according to $U_2(t) = \sin \omega t$, $t > 0$, $U_2(t) = 0$, $t < 0$ (5) two waves occur with a phase difference $\Delta t \approx a^2/2rc$ which decreases as the distance from the membrane increases. These considerations are valid for the greater part also for processes in sonic fields of membranes with contours not describable by analytic functions. For quadratic membranes only the sources at the sides dl and gf produce a considerable field strength at the point of observation. The corresponding transition process is in agreement with the corresponding process of a circular membrane. The main difference between the processes in circular and quadratic membranes is observed in the neighborhood of the rear front of the disturbance. The calculation methods hitherto mentioned can be used also for triangular membranes. Only that side of the triangle directed to the point of observation contributes to the transition process. In the stationary and nonstationary case regions with weak sonic fields occur. There are 8 figures and 2 Soviet references.

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B125/B102

ASSOCIATION: Leningradskiy gosudarstvennyy universitet (Leningrad State University)

SUBMITTED: June 11, 1960

Fig. 5

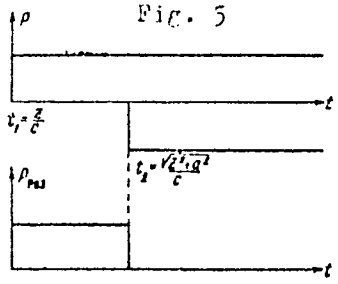
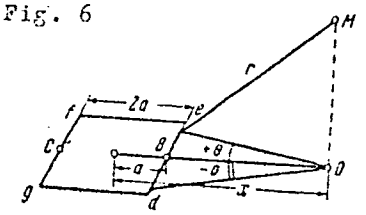


Fig. 6



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S/046/62/008/001/007/018
B125/B102

AUTHORS: Kozina, O. G., Makarov, G. I., Shaposhnikov, N. N.

TITLE: Transition processes in acoustic fields arising on the oscillation of a spherical segment

PERIODICAL: Akusticheskiy zhurnal, v. 8, no. 1, 1962, 72 - 78

TEXT: The authors consider a sphere of radius R with one or two spherical segments (divergence angle θ_0) which is placed in an unbounded liquid medium of the density ϱ and the sound speed c. The wave equation of the segments oscillating like a membrane has the solution

$$P_1 = \sum_{n=0}^{\infty} D_{2n}(r, t)\,[P_{2n-1}(\cos\theta_0) - P_{2n+1}(\cos\theta_0)]\,P_{2n}(\cos\theta), \quad (3)$$

$$P_2 = \sum_{n=0}^{\infty} D_{2n+1}(r, t)\,[P_{2n}(\cos\theta_0) - P_{2n+2}(\cos\theta_0)]\,P_{2n+1}(\cos\theta), \quad (4)$$

$$P_3 = \sum_{n=0}^{\infty} \frac{1}{2} D_n(r, t)\,[P_{n-1}(\cos\theta_0) - P_{n+1}(\cos\theta_0)]\,P_n(\cos\theta), \quad (5)$$

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if the initial conditions

$$U_r|_{r=R} = \begin{cases} f(t), & 0 \leqslant \theta \leqslant \theta_0 \\ 0, & \theta_0 \leqslant \theta \leqslant \pi - \theta_0 \\ \pm f(t), & \pi - \theta_0 \leqslant \theta \leqslant \pi, \end{cases} \quad (1)$$

for two segments oscillating in the same phase (plus sign) or the opposite phase (minus sign) and

$$U_{|r=R} = \begin{cases} f(t), & 0 \leqslant \theta \leqslant \theta_0 \\ 0, & \theta_0 \leqslant \theta \leqslant \pi. \end{cases} \quad (2)$$

for a unilaterally oscillating segment are taken into account. $P_n(\cos \theta)$ are Legendre polynomials and U_r is the radial component of the membrane velocity. f(s) is the spectrum of the signal (1). The radial part D_ν is a spherical wave with the fore front ct = ν - R and the entire solution consists of a superposition of spherical waves. In the neighborhood of the wave fronts formula

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$$p = \frac{\rho c}{\pi}\frac{R}{r}\sqrt{\frac{\sin 2\alpha\cos\beta}{\sin\theta}}\sqrt{\frac{R}{ct}}\int_0^{\theta_0}\frac{\sin\varphi}{\sqrt{\cos\varphi-\cos\theta_0}}\sum_{n=n_0}^{\infty}\frac{\sin\left[\left(2n+\frac{1}{2}\right)X(\varphi)\right]}{2n+\frac{1}{2}}+$$

$$+\sum_{n=n_0}^{\infty}\frac{\sin\left[\left(2n+\frac{1}{2}\right)Y(\varphi)\right]}{2n+\frac{1}{2}}+\sum_{n=n_0}^{\infty}\frac{\cos\left[\left(2n+\frac{1}{2}\right)V(\varphi)\right]}{2n+\frac{1}{2}}-\sum_{n=n_0}^{\infty}\frac{\cos\left[\left(2n+\frac{1}{2}\right)W(\varphi)\right]}{2n+\frac{1}{2}}, \quad (12)$$

with $X(\varphi) = \varphi - \theta + \Omega$, $Y(\varphi) = \varphi + \theta - \Omega$, $V(\varphi) = \varphi - \theta - \Omega$, $W(\varphi) = \varphi + \theta + \Omega$ is obtained for the segments oscillating in the same phase with the aid of the asymptotic estimations of G. I. Petrashen' and G. I. Makarov (Uch. zap. LGU, 1953, 27, 170, 266). The significance of the angles Ω, α, β appears from Fig. 3. Analogous formulas are valid for the segments oscillating in the opposite phase and for unilaterally radiating segments. If the circumference of the sphere is an integral multiple of the wavelength, resonance occurs. The segments oscillating in phase have more resonant frequencies. The fields of the three types of radiators characterized by the boundary conditions (1) and (2) consist of a region of geometrical

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transition processes and a region of the diffraction transition processes according to the type of the transition processes. All wave fronts lie exclusively in the region of the geometrical transition processes. The free oscillations in the fields of the three types of radiators have different frequencies in the diffraction region. The region of the geometrical transition processes is similar to that of the transition processes studied earlier. Owing to the diffraction transition processes which occur as a result of mechanical bending the transition process gradually tends to zero only asymptotically. In plane piston-type membranes in an infinitely rigid screen the transition processes are finite with respect to time. There are 4 figures and 4 Soviet references.

ASSOCIATION: Leningradskiy gosudarstvennyy universitet (Leningrad State University)

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