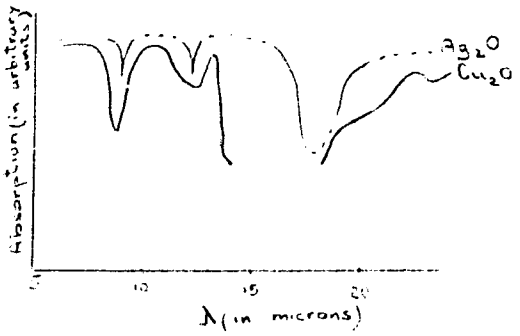
Infrared Absorption Spectrum... S/051/61/010/003/008/010
E032/E514

(Cu_2O) corresponds to the band at 9.3 μ (Ag_2O) if the mass of Cu is replaced by the mass of Ag and this directly confirms the vibrational nature of the bands. There are 1 figure and 3 Soviet references.

SUBMITTED: September 23, 1960

Figure



Card 3/3

9.4177 (also 1051, 1035)
26.2421

33369
S/181/62/004/001/047/052
B112/B138

AUTHORS: Gross, Ye. F., and Kreyngol'd, F. I.

TITLE: Optical and photoelectric properties of mercury sulfide in the main absorption edge range

PERIODICAL: Fizika tverdogo tela, v. 4, no. 1, 1962, 291 - 293

TEXT: Studying the diffuse reflection spectrum, the authors found the absorption edge of HgS to be 6100 Å at room temperature and 5500 Å at 77°K. The forbidden band width was $9 \cdot 10^{-4}$ ev/grad. The absorption band lies between 5510 and 5560 Å at 77°K. Fig. 1 shows the spectral distribution of the photoconductivity of two groups of HgS crystals (T = 77°K). The absorption line of the first group (a) corresponds to the maximum and that of the second group (b), to the minimum of the photo current. Fig. 2 shows the spectral distribution of the photoconductivity of a HgS crystal in the region around the electrodes (T = 77°K). There is no

Card 1/3

X

Optical and photoelectric...

infrared quenching for HgS crystals of the second group at room temperature. There are 2 figures and 4 references: 2 Soviet and 2 non-Soviet. The reference to the English-language publication reads as follows: D. R. Hamilton. Brit. J. Appl. Phys. 2, 103, 1958.

ASSOCIATION: Leningradskiy gosudarstvennyy universitet (Leningrad State University)

SUBMITTED: September 11, 1961

Card 2/2

34251
S/181/62/004/002/047/0?1
B102/B138

24.3500 (1137, 1138)

AUTHOR: Kreyngol'd, F. I.

TITLE: Optical properties of black mercury selenide

PERIODICAL: Fizika tverdogo tela, v. 4, no. 2, 1962, 560 - 562

TEXT: Black HgS was produced by vacuum sublimation and by chemical means. Some of its optical properties were investigated using a ЗМР-3 (ZMR-3) monochromator with a quartz prisma. The absorption spectrum was studied with an HgS layer on glass. At 300°K the absorption edge was at 1.7μ, at 90°K, at 1.9μ. Few semiconductors show such a shift when temperature is decreased. The forbidden band broadens by $2 \cdot 10^{-4}$ ev/deg with cooling from 300 to 90°K. The forbidden band width was determined from the spectral distribution of reflectivity, and was 0.7 ev for cubic HgS powder. This is lower than the theoretical value. Vacuum sublimated HgS shows one band of infrared luminescence, with its maximum at 2.1μ (300°K). If cooled to 77°K the absorption band shifts to longer waves, its maximum being at 2.5μ. Luminescence is excited by light of the self-absorption range. L. I. Galkin and N. V. Korolev (DAN SSSR, 22, 529, 1956) have observed a similar

Card 1/2

infrared luminescence band in PbS. Comparison with other works shows that the luminescence band maxima at these temperatures are identical for red and black HgS. Professor Ye. F. Gross is thanked for his interest. There are 2 figures and 6 references: 1 Soviet and 5 non-Soviet. The four most recent references to English-language publications read as follows: P. Manca, J. Phys. Chem. Solids, 20, 268, 1961; J. P. Suchet. J. Phys. Chem. Solids, 16, 265, 1960; G. F. J. Garlick, M. J. Dumbleton. Proc. Phys. Soc. B67, 442, 1957; G. F. J. Garlick. J. Phys. Chem. Solids, 8, 449, 1959.

ASSOCIATION: Leningradskiy gosudarstvennyy universitet (Leningrad State University)

SUBMITTED: November 11, 1961

24.7700

S/181/62/004/009/033/045
B102/B186

AUTHOR: Kreyngol'd, F. I.

TITLE: Photoconductivity of HgS single crystals

PERIODICAL: Fizika tverdogo tela, v. 4, no. 9, 1962, 2597 - 2600

TEXT: Experimental data on the photocurrent in semiconductors diverge strongly because of differences in the conditions of testing. To study how non-uniform illumination affects the spectral distribution of the photocurrent, the photocurrent spectra of HgS single crystals obtained under different illumination conditions at 77°K have been compared. An MCH-51 (ISP-51) spectrograph was used as monochromator. The experiments showed that non-uniform illumination changed considerably the spectrum obtained by uniform illumination. While the latter shows only one maximum at about 5500 Å, the former has a narrow peak at about 5600 Å, and a second weak maximum at 5500 Å. The steep decrease occurs at about 5570 Å, the fundamental absorption edge λ_0 = 5530 Å. On a temperature increase, the decrease and the edge are shifted toward longer waves. In experiments with non-uniform illumination, the dependence of the photo-

Card 1/2

Photoconductivity of...

current spectrum on the voltage V at the electrodes was determined, and the dependence of the volt-ampere characteristics on the wavelength λ of the incident light was also studied. At λ = 5500 Å, I increases only slightly with V, at λ = 5600 Å more strongly with a certain tendency of saturation; with uniform illumination at 5500 Å, I(V) at first proceeds as in the above-mentioned case (5600 Å), but a steep increase is observed at $V \gtrsim 350$ v. The dependence of the photocurrent on the position of the light probe was also investigated for $\lambda \gtrsim \lambda_0$. In ZnSe and CdS, similar effects as that in HgS were observed by various authors. The longwave maximum appearing with non-uniform illumination is ascribed to the effect of volume charges, the density of which strongly increases near λ_0. There are 3 figures.

ASSOCIATION: Leningradskiy gosudarstvennyy universitet (Leningrad State University)

SUBMITTED: March 29, 1962 (initially) May 30, 1962 (after revision)

KREYNGOL'D, F.I.

Spectral distribution of photoconductivity in CdS single crystals excited by modulated light. Fiz.tver.tela 4 no.12: 3415-3417 D '62. (MIRA 15:12)

1. Leningradskiy gosudarstvennyy universitet.
(Photoconductivity)
(Cadmium sulfide crystals--Spectra)

KREYNGOL'D, F.I.

Excitation spectra of the photoconduction of CdS and CdSe single crystals. Fiz. tver tela 5 no.9:2428-2431 S '63. (MIRA 16:10)

1. Leningradskiy gosudarstvennyy universitet.

ACCESSION NR: AP4039642 S/0181/64/006/006/1612/1618

AUTHORS: Kreyngol'd, F. I.; Novikov, B. V.

TITLE: A study of the reasons for the variability of spectral lines of photoconductivity of CdS crystals in the boundary region of absorption

SOURCE: Fizika tverdogo tela, v. 6, no. 6, 1964, 1612-1618

TOPIC TAGS: spectral line, photoconductivity, cadmium sulfide, absorption, excitation, modulated light, thermal conductivity/ ISP 28 spectrograph, SVDSh 500 illuminator

ABSTRACT: The authors investigated the correlation between the changes in the fine structure spectral lines of photocurrent in CdS crystals (originating from the process of cooling the crystals from 77 to 4K) and the changes occurring in the photocurrent spectra during transition from the modulated regime of excitation to the unmodulated regime. Experiments were performed to study the thermally stimulated current and the luminiscence spectra at 77K. Ye. F. Gross and B. V. Novikov had shown earlier (FTT, 1, 357, 1959) that it was possible to classify these crystals into two groups according to the spectral lines. It is shown in the present work that the first group is characterized by one peak (0.15 ev) of the

Card 1/3

thermally stimulated current in the interval of temperature from -196C to 20C; also, they do not show luminescence. The crystals of the second group are characterized by two peaks (0.15 and 0.35 ev) in the same range of temperature, and they show strong green or orange luminescence at 75K. Data on the spectra of photocurrent revealed that in a series of cases the spectral lines differed essentially in the range of 77-4K. In the second group, some lines transformed into the first group on cooling from 77 to 4K. The role played by the collector was investigated by the method of thermally stimulated conductivity, outlined by A. P. Trofimenko and G. A. Fedorus (UFZh, 3, 468, 1958) and by I. I. Boyko, E. I. Rashba, and A. P. Trofimenko (FTT, 2, 109, 1959). The crystal was first cooled to 77K, and subjected to intensive illumination. Then the light was shut off, and the dependence of dark current on temperature was measured. The rate of heating (at a value between 0.07 and 0.3C/sec, depending on the experiment) was kept constant. The intensity of the collector was obtained from the following formula

$$\frac{E}{kT_m} = \ln\left(\frac{T_m^2}{\beta}\right) + \ln\left(\frac{A}{E}\right),$$

where E is the intensity of the collector, β the rate of heating, T_m the temperature at which the thermally stimulated conductivity is a maximum, and A is a constant. Along with this the lurinescence of CdS crystals was also studied. The spectra were observed, using an ISP-28 spectrograph and a SVDSh-500 illuminator.

ACCESSION NR: AP4039642

These experiments revealed the connection between the luminescence and the presence of collectors at 0.15 ev. Luminescence originated at 77K only in such crystals in which collectors were present. The authors thank Associate Member of the AN SSSR, Professor Ye. F. Gross, for his interest in this work and valuable discussions, and Ye. Andreyev, graduate student at LGU, for helping with the experiments. Orig. art. has: 3 figures, 2 tables, and 1 formula.

ASSOCIATION: Leningradskiy gosudarstvennyy universitet (Leningrad State University)

SUBMITTED: 18Nov63

ENCL: 00

SUB CODE: SS

NO REF SOV: 012

OTHER: 006

Card 3/3

KREYNGOL'D, F.I.; NOVIKOV, B.V

Causes of the variability of the spectral curves of the photoconductivity of CdS crystals in the region of the absorption edge. Fiz. tver. tela 6 no.6:1612-1618 Je '64. (MIRA 17:9)

1. Leningradskiy gosudarstvennyy universitet.

L 24283-66 EWT(m)/EWP(t) IJP(c) JD/JG

ACC NR: AP6007009 SOURCE CODE: UR/0051/66/020/002/0336/0337

AUTHOR: Kreyngol'd, F. I.

ORG: none

TITLE: Optical absorption of Ag_2O in the infrared region of the spectrum

SOURCE: Optika i spektroskopiya, v. 20, no. 2, 1966, 336-337

TOPIC TAGS: silver compound, ir absorption, absorption spectrum

ABSTRACT: This is a continuation of earlier work by the author (with Ye. F. Gross, Opt. i spektr. v. 10, 417, 1961), where it was shown that the spectrum of silver oxide has three broad absorption bands in the region from 410 to 1500 cm^{-1}, but the values obtained for the locations of the maxima of these bands did not agree with those by E. Fortin and F. Weichman (Phys. Stat. Solidi v. 5, 515, 1964). The present investigation was repeated to determine the causes of the discrepancy between the two sets of results. The measurements were made in the 6--15 μ region, using both powders and films of Ag_2O. The spectrum of compressed Ag_2O powder showed absorption bands at 802 and 1073 cm^{-1}, and also intense bands at 1350 and 1420 cm^{-1} which were not observed before. The results turned out to be sensitive to the substrates on which the powder was deposited (substrates of AgCl, NaCl, and KBr were used), the results having shown that the silver oxide interacts strongly with NaCl and KBr. In the case of films deposited on single crystals of NaCl, KBr, and Ge, the absorption spectra were found to be the same as for the absorption spectrum of the powder coated on NaCl.

Card 1/2 UDC: 535.34-15

L 24283-66

ACC NR: AP6007009 O

The behavior of powder and film on KBr was likewise found to be similar. The intense bands at 1350 and 1420 cm^{-1} did not appear on germanium, indicating that these bands are associated with the presence of an impurity. Of the bands observed at 802, 830, and 870 cm^{-1}, it is concluded that only the 802 cm^{-1} belongs to the absorption spectrum of free Ag_2O, while the other bands are caused by interaction of the silver oxide with the substrate. This interaction explains also the discrepancy between the two earlier investigations. Orig. art. has: 1 figure.

SUB CODE: 20/ SUBM DATE: 22Apr65/ ORIG REF: 001/ OTH REF: 001

Card 2/2 FV

NR: AP7000540 SOURCE CODE: UR/0386/66/004/010/0418/0422

AUTHOR: Gross, Ye. F.; Kreyngol'd, F. I.

ORG: Leningrad State University im. A. A. Zhdanov (Leningradskiy gosudarstvenny universitet)

TITLE: Excitons in Ag_2O crystals

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki. Pis'ma v redaktsiyu. Prilozheniye, v. 4, no. 10, 1966, 418-422

TOPIC TAGS: silver compound, line splitting, spin orbit coupling, valence band, light absorption, absorption spectrum, absorption edge

ABSTRACT: To check whether the splitting of the upper valence band in crystals of the Cu_2O type, which results in the appearance of two lines (yellow and green) in its spectrum, is caused by spin-orbit interaction or by the 2p levels of the O^{--} ion, the authors studied the optical absorption spectrum of Ag_2O, which is isomorphic to Cu_2O. They succeeded in obtaining good crystals by chamical precipitation, and measured the spectra at temperatures from 77 to 20K. At 77K the Ag_2O spectrum has three absorption lines, two (narrow) at the edge of the main absorption (8020 and 7950 Å), and third (broader) deep in the absorption band (7150 Å). No tests could be made at 4.2K because the Ag_2O was perfectly opaque to the investigated spectral region. At 20K, two series of lines were observed, of wavelengths 7848 - 7948 ("infrared") and 6990 - 7080 Å ("red"), respectively, which turned out to be analogs of the yellow and green lines

L 10942-67
ACC NR: AP7000540

of the Cu_2O. The line frequencies can be described by a hydrogenlike formula, and it is concluded from an examination of the Rydberg constants and the line widths of the series that they are due to spin-orbit splitting, which is probably also responsible for the similar splitting in Cu_2O. Orig. art. has: 2 formulas and 2 tables.

SUB CODE: 20/ SUBM DATE: 14Sep66/ ORIG REF: 004/ OTH REF: 003.

Card 2/2 lp

S/080/61/034/001/001/020
A057/A129

5.2400 1043, 1208, 1228 26.1632 26.2351

AUTHORS: Samsonov, G.V., Paderno, Yu.B., Kreyngol'd, S.U.

TITLE: Preparation of Lanthanum Hexaboride

PERIODICAL: Zhurnal Prikladnoy Khimii, 1961, Vol. 34, No. 1, pp. 10-15

TEXT: The preparation of lanthanum hexaboride from lanthanum oxide and boron carbide or boron was investigated and optimum conditions in vacuum were determined. Hexaborides of rare-earth metals are of interest since these borides (especially LaB_6) are used as materials for power-tube cathodes. A method is presented to establish the best conditions for obtaining also hexaborides of the other rare-earth metals. The pulverized materials La_2O_3, B_4C and B were mixed in stoichiometric compositions corresponding to the equations:

$$La_2O_3 + 3\ B_4C \longrightarrow 2\ LaB_6 + 3\ CO \quad (1) \text{ or}$$

$$La_2O_3 + 15\ B \longrightarrow 2\ LaB_6 + 3/2\ B_2O_2 \quad (2)$$

and then sieved and briquetted. The briquettes were fired at the tempera-

Preparation of Lanthanum Hexaboride

ture investigated in a vacuum oven and the reaction rate was determined by controlling the change of pressure for different temperatures. In Fig.1 the dependence of the pressure on the holding time in the reaction of La_2O_3 with B_4C is demonstrated. The obtained products were subjected to chemical and x-ray analysis with a РКД (RKD) camera and Cu-source. The obtained experimental results are presented in Tables 1 and 2. Both reactions (1) and (2) start at 1,200-1,300°C and terminate after 1 hr at 1,500-1,600°C. Thus optimum temperature is in the range of 1,500-1,600°C. Reaction (2) gives a carbon-free product. At higher temperatures losses of lanthanum due to evaporation take place in reaction (2). Approximate heat of formation for LaB_6 was determined by tensiometric analysis with -112.3±6.5 kcal/mole. Temperature dependence of the true specific heat of LaB_6 is $c_p = 21.73+20.4\cdot10^{-3}\cdot T$ cal/mole·degree. The obtained value for the heat of formation compared with the corresponding value for CeB_6 (-81 kcal/mole) confirms the theory of dependence of the thermodynamical stability on electron configuration. In connection with preparations of borides the following papers were mentioned: G.V. Samsonov, Yu.B. Paderno, SOV Patent No. 121561 (1959); G.V. Samsonov, A.Ye. Grodshteyn, ZhFKh, 30,379,1956; V.S. Neshpor, G.V. Samsonov, Elektronika 3,148 (1959); Yu.B. Paderno, T.I. Serebryakova, G.V. Samsonov, Doklady AN

Card 2/5

Preparation of Lanthanum Hexaboride

SSSR, 125,317 (1959); G.V. Samsonov, N.N. Zhuravlev, Yu.B. Paderno, V.R. Melik-Adamyan, Kristallografiya, 4,538 (1959). There are 4 figures, 3 tables and 21 references: 15 Soviet-bloc and 6 non-Soviet-bloc. The references to the English-language publications read as follows: E. Felten, I. Binder, B. Post, J.Am.Chem.Soc., 80,3479 (1958); J. Lafferty, J.Appl.Phys., 22,299 (1951); A. Searcy, C. Myers, J.Phys.Chem., 61,957 (1957).

ASSOCIATION: Institut metallokeramiki i spetssplavov AN UkrSSR (Institute of Powder Metallurgy and Special Alloys of the AS UkrSSR)

SUBMITTED: April 30, 1960

Card 3/5

BOZHEVOL'NOV, Ye. A.; KREYNGOL'D, S. U.

Determination of calcium in water, acids, and salts by means of fluorescein-complexon. Metod. anal. khim.reak. i prepar. no. 4:85-88 '62.

Determination of copper in water and acids with lumocupferron. Ibid.:96-99.

Determination of sulfates in water, acids, and salts with fluorescein-complexon. Ibid.:131-133. (MIRA 17:5)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut khimicheskikh reaktivov i osobo chistykh khimicheskikh veshchestv.

KREYNGOL'D, S. U.; BOZHEVOL'NOV, Ye. A.

Determination of copper in water and acid with fluorescein-complexon. Metod. anal. khim. reak. i prepar. no. 4:100-107 '62. (MIRA 17:5)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut khimicheskikh reaktivov i osobo chistykh khimicheskikh veshchestv.

GODLINA, G.S.; BOZHEVOL'NOV, Ye.A.; KREYNGOL'D, S.U.

Tetramercury fluorescein acetate. Met. poluch. khim. reak. i prepar. no.6:52-54 '62. (MIRA 17:5)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut khimicheskikh reaktivov i osobo chistykh khimicheskikh veshchestv.

BOZHEVOL'NOV, Ye.A.; KREYNGOL'D, S.U.

Fluorescence complexometric determination of trace amounts of calcium. Zhur.anal.khim. 17 no.5:560-564 Ag '62. (MIRA 16:3)

1. All-Union Scientific Research Institute of Chemical Reagents, Moscow.
(Calcium--Analysis) (Complex compounds) (Fluorescence)

BOZHEVOL'NOV, Ye.A. (Moscow, Bogorodskiy val.d.3); SEREBRYAKOVA, G.V. (Moscow, Bogorodskiy val.d.3); YANISHEVSKAYA, V.M. (Moscow, Bogorodskiy val.d.3); KREYNGOL'D, S.U. (Moscow, Bogorodskiy val.d.3)

Use of luminescence analysis for determining inorganic contaminations. Acta chimica Hung 32 no.2:199-206 '62.

1. Vsesoyuznyy nauchno-issledovatelskiy institut khimicheskikh reaktivov.

KREYNGOL'D, S.U.; BOZHEVOL'NOV, Ye.A.

New luminescent catalytic reaction for determining copper.
Zhur.anal.khim. 18 no.8:942-949 Ag '63. (MIRA 16:12)

1. All-Union Scientific-Research Institute of Chemical Reagents and Substances of Special Purity, Moscow.

KREYNGOL'D, S.U.; BOZHEVOL'NOV, Ye.A.; LASTOVSKIY, R.P.; SIDORENKO, V.V.

Determination of iron in water, acids, and salts by a kinetic method with the use of stilbene complexon. Zhur. anal. khim. 18 no.11:1356-1361 N '63. (MIRA 17:1)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut khimicheskikh reaktivov i osobochistykh khimicheskikh veshchestv, Moskva.

BOZHEVOL'NOV, Ye.A.; KREYNGOL'D, S.U.

Use of fluorescein complexon in the analysis of cation traces.
Trudy IREA no.25:24-40 '63. (MIRA 18:6)

KREYNGOL'D, S.U.; BOZHEVOL'NOV, Ye.A.

Analytical properties of florescein-complexon. Trudy IREA no.25: 358-373 '63. (MIRA 18:6)

KREYNGOL'D, S.U.; BOZHEVOL'NOV, Ye.A.; SEREBRYAKOVA, G.V.

Determination of the instability constant of a complex of 8-(p-toluenesulfonylamino)-quinoline with zinc. Trudy IREA no.25:422-426 '63. (MIRA 18:6)

BOZHEVOL'NOV, Ye.A.; KREYNGOL'D, S.U.; LASTOVSKIY, R.P.; SIDORENKO, V.V.

Use of luminescent reagents in the kinetic method of analysis. Dokl. AN SSSR 153 no.1:97-100 N '63. (MIRA 17:1)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut khimicheskikh reaktivov i osobo chistykh khimicheskikh veshchestv. Predstavleno akademikom A.P. Vinogradovym.

L 49412-65 EWG(j)/EWT(m)/EPF(c)/EPR/EWP(t)/EWP(b) Pr-4/Ps-4 IJP(c) JD/JG

ACCESSION NR: AP5009923 UR/0032/65/031/004/0508/0509

41
33
B

AUTHORS: Kreyngol'd, S. U.; Bozhevol'nov, Ye. A.; Sinyaver, L. G.

TITLE: An arrangement for recording the kinetics of reactions

SOURCE: Zavodskaya laboratoriya, v. 31, no. 4, 1965, 508-509

TOPIC TAGS: reaction kinetics, colorimetric analysis, curve fitting, least square method, reaction rate, reaction temperature, error measurement, density measurement / FEK M photoelectronic colorimeter, FEK N photoelectronic colorimeter, EPP 09 automatic recorder

ABSTRACT: A simple device based on a photoelectronic colorimeter was developed for recording reaction speeds with the help of colored indicator substances. A straight line is produced on the tape of the automatic recorder. The slope of this line is proportional to the speed of the reaction of the zero or the first order in accordance with the indicator substance. The system is most satisfactory when the coloration of the indicator substance decreases and the products are colorless. The setup consists of either an FEK-M or FEK-N photoelectronic colorimeter with an EPP-09 recorder. A 4-5 kohm variable resistor is connected in parallel with the input of the EPP-09, and the resistance is selected on the

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ACCESSION NR: AP5009923

basis of the maximum optical density anticipated in the measurement. A solution is placed in both containers of the system, and an optical wedge is used for balancing the two light fluxes. The test solution is then placed in the right container, and the signal $i = k (I_l - I_r)$ is recorded on the automatic recorder (I_l and I_r are the light fluxes striking the left and the right photoelements). If the change in density is $< 40\%$, then i vs time is a line with only a slight curvature. The divergence of the points on the curve from the straight line constructed by the least square method is $< 2\%$ for both the zero order and the first order reactions. Thus, the adjusted experimental curve indicates the reaction speed. The method was checked for the reaction of iron determination with the use of dark-blue acid chrome (see Fig. 1 on the Enclosure). The reaction speed is proportional to the iron ion concentration, decreases in the the presence of multivalent cations, and rises with the increase of temperature and the H_2O_2 concentration (up to $\sim 10^{-4}$m). The sensitivity at 50C is 0.002 mkg/ml, and the relative error in the range 0.01 mkg Fe^{3+} is 7-10%. Figure 2 on the Enclosure shows the linear relationship of tangent α to iron. This method gave an iron determination in lanthanum oxide and in germanium tetrachloride with an error $\sim 15\%$. Orig. art. has: 2 tables and 2 figures.

L 49412-65

ACCESSION NR: AP5009923

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut khimicheskikh reaktivov i osobo chistykh khimicheskikh veshchestv (All-Union Scientific Research Institute of Chemical Reagents and Extremely Pure Chemical Substances)

SUBMITTED: 00 ENCL: 02 SUB CODE: GC

NO REF SOV: 002 OTHER: 000

Card 3/5

ACC NR: AP7007806 (N) SOURCE CODE: UR/0080/67/040/001/0178/0180

AUTHOR: Martynov, Yu. M.; Kurlyandskaya, I. I.; Kreyngol'd, Ye. A.

ORG: none

TITLE: Separation factors in the indium trichloride - silicon tetrachloride system

SOURCE: Zhurnal prikladnoy khimii, v. 40, no. 1, 1967, 178-180

TOPIC TAGS: indium compound, silicon compound, chloride, chemical separation, adsorption, silica gel

ABSTRACT: The object of the work was to determine the behavior of indium trichloride during its adsorption on silica gel from a solution in silicon tetrachloride. A study of the solubility of $InCl_3$ in $SiCl_4$ at -23, 0, 20 and 40° made it possible to determine the heat of solution, which was found to be 7840±50 cal/mole. Measurement of the adsorption of $InCl_3$ on silica gel at 0, 20 and 40° showed the heat of adsorption to be 7620±50 cal/mole. Calculation of the separation factors in the $InCl_3$-$SiCl_4$ system showed that the highest values for these factors are obtained during crystallization of $InCl_3$, but it is noted that this method should not be used to lower the concentration of this substance below the solubility limit at the freezing point of the mixture. The separation factors during adsorption are sufficiently high to permit the use of adsorption for analytical or technological purposes. Orig. art. has: 2 figures, 1 table and 2 formulas.

Card 1/2 UDC: 541.123

ACC NR: AP7007806

SUB CODE: 07/ SUBM DATE: 25March65/ ORIG REF: 004

Card 2/2

MARTYNOV, Yu.M.; KURLYANDSKAYA, I.I.; KREYNGOL'D, Ye.A.

Solubility of copper chlorides in silicon tetrachloride. Zhur. neorg. khim. 9 no.10:2297-2298 O '64.
(MIRA 17:12)

L 12925-66 EWT(m)/EWP(t)/EWP(b)/ IJP(c) JD

ACC NR: AP6000181 SOURCE CODE: UR/0032/65/031/012/1447/1447

AUTHOR: Martynov, Yu. M.; Kreyngol'd, Ye. A.; Mayevskaya, B. M.

32
B

ORG: none

TITLE: Determination of microquantities of copper in silicon tetrachloride

SOURCE: Zavodskaya laboratoriya, v. 31, no. 12, 1965, 1447

TOPIC TAGS: microchemical analysis, silicon, copper, luminescent material

ABSTRACT: The spectral analysis and luminescence methods for determining microquantities of copper in silicon tetrachloride are compared. Authors recapitulate previously published data on the two methods and conclude that while both methods permit the determination of $1 \cdot 10^{-8}$% microquantities of copper in a 50 g batch, the error in the luminescence method is 10 times less than in the spectral method (see table). Best results were obtained by the luminescence determinations in the concentration range 5×10^{-6} to 5×10^{-8} copper. Orig. art. has: 1 table.

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L 12925-66

ACC NR: AP6000181

Analysis of silicon tetrachloride samples

Concentration Conditions	Spectral Conclusions		Luminescence Conclusions	
	Cu, wt % found	coefficient of variation	Cu, wt % found	coefficient of variation
3.5 ml $SiCl_4$ 2 ml CCl_4 0.2 ml HF	$4 \cdot 10^{-6}$	25	$4 \cdot 10^{-6}$	3.5
	$8 \cdot 10^{-6}$	31	$7 \cdot 10^{-6}$	4.6
	$4 \cdot 10^{-7}$	30	$3 \cdot 10^{-7}$	5.0
	$2 \cdot 10^{-7}$	32	$1 \cdot 10^{-7}$	5.5
35 ml $SiCl_4$ 10 ml CCl_4 2 ml HF	$8 \cdot 10^{-8}$	36	$7 \cdot 10^{-8}$	7.0

SUB CODE: 07/ SUBM DATE: 00/ ORIG REF: 002/ OTH REF: 000

Card 2/2

GRIGOR'YEV, B.S.; GERASKIN, V.N.; KREYNIN, A.M.

Use of a conveyer for laying out yarn. Tekst.prom. 16 no.12:43-44 D'56. (MLRA 10:1)

(Yarn) (Conveying machinery)

ARKHANGEL'SKIY,A.S.; KREYNIN,A.V.; KUCHURIN,S.F.; MASTERITSYN,N.N.; SOKOLOV,P.G.; FEYGIN,I.Ya.; KHOKHLOV,L.P.; YANKINA,A.P.; KUCHURIN,S.F., redaktor; VERINA,G.P., tekhnicheskiy redaktor

[Rate book for railroad transportation] Spravochnik po tarifam zheleznodorozhnogo transporta. Moskva, Gos.transp. zhel-dor. izd-vo, 1955. 326 p. (MLRA 9:3)

(Railroads--Rates)

ARKHANGEL'SKIY, A.S., inzhener; KREYNIN, A.V., inzhener.

Ways of improving the system of freight rates. Zhel. dor. transp. 38 no.9:33-39 S '56. (MLRA 9:10)

(Railroads--Rates)

KREYNIN A.

ARKHANGEL'SKIY, A.; KREYNIN, A.

Problems in price formation and the rate system for railroad freight.
Vop. ekon. no.11:112-120 N '57. (MIRA 11:2)
(Railroads--Rates)

KREYNIN, A.V., inzh.

Railroad freight rates and ways of developing them. Trudy MTSI no.9: 113-125 '58. (MIRA 11:5)

(Railroads--Rates)

KREYNIN, A.

Price determination in transport ("Cost of railroad transportation and freight tariffs" by A.P. Abramov, A.G. Zakharov; G.V. Kotov; "Railroad tariffs in the U.S.S.R." by S.F. Kuchurin. Reviewed by A. Kreinin). Vop. ekon. no.8:130-136 Ag '59.

(MIRA 12:11)

(Railroads--Rates)
(Abramov, A.P.) (Zakharov, A.G.) (Kotov, G.V.)
(Kuchurin, S.F.)

KREYNIN, A.V., inzh.

Some problems in setting freight rates. Zhel.dor.transp. 42 no.4:56-60 Ap '60. (MIRA 13:7)
(Railroads--Rates)

KREYNIN, A.V., inzh.

Principles for the setting of passenger fares and their improvement. Zhel. dor. transp. 45 no.3:38-42 Mr '63.
(MIRA 16:6)
(Railroads—Fares)

TRUBIKHIN, M.G., kand. ekon. nauk; FLEYSHMAN, F.M., kand. ekon. nauk;
KREYNIN, A.V., kand. ekon. nauk

Principles for establishment of freight rates on socialist railroads. Vest. TSNII MPS 22 no.7:49-52 '63. (MIRA 16:12)

TRUBIKHIN, M.G., kand. ekonom. nauk; FREYSHMAN, F.M., kand. ekonom. nauk; KREYNIN, A.V., kand. ekonom. nauk; KUSHTAL', I.I., red.

[Principles for the establishment of railroad freight rates in socialist management]. Printsipy postroeniia zheleznodorozhnykh gruzovykh tarifov v sotsialisticheskom khoziaistve. Moskva, Transport, 1964. 46 p. (Moscow, Vsesoiuznyi nauchno-issledovatel'skii institut zheleznodorozhnogo transporta, Trudy, no.278). (MIRA 17:7)

KREYNIN, G.

Collective or individual wage payments? Sots. trud no.12: 99-100 D '56. (MLRA 10:2)

1. Chernovitskiy trest "Ukrglavkhleb." (Food industry) (Wages)

KUTSEVALOV, I.; KREYNIN, G.

Computing fulfillment of norms. Sots. trud no.7:133-135 Jl '57.
(MLRA 10:8)

1. Normirovshchik Tashkentskogo remontno-mekhanicheskogo zavoda (for Kutsevalov). 2. Zamestitel' nachal'nika proizvodstvenno-planovogo otdela Chernovitskogo tresta "Ukrglavkhleb" (for Kreynin).
(Production standards)

SAVITSKIY, Ivan Nikolayevich; KREYNIN, Gerts L'vovich; MIKHAYLOV, Andrey Andreyevich; SMYRNOV, Ye.I., red.; DUBINSKIY, G.L., spets. red.; PONOMAREVA, A.A., tekhn. red.

[Planning and organization of the supply of materials and equipment in enterprises and construction projects]Planirovanie i organizatsiia material'no-tekhnicheskogo snabzheniia predpriiatii i strook. Moskva, Ekonomizdat, 1962. 303 p. (MIRA 15:8)

(Industrial procurement)

MASLOV,P.P.; PISAREV,I.Yu., professor, redaktor; KHEYNIN,G.S.; MOSKVI-cheva,N.I., tekhnicheskiy redaktor

[Critical analysis of bourgeois statistical publications] Kriticheskii analiz burzhuaznykh statisticheskikh publikatsii. Moskva, Izd-vo Akademii nauk SSSR, 1955. 477 p. (MLRA 9:1)
(Statistics)

KREYNIN, G.S.

A review of the industrial output index in the U.S. Uch.zap.po stat. 1:139-150 '55. (MLRA 9:11)
(United States--Industrial statistics)

KREYNIN, G. V.

DEMIN,A.V.; YELISEYEV,N.N.; KREYNIN,G.V.; MOROZOV,Ye.A.; TSUKERNIK,L.M.; CHERKASSKIY,A.Kh.; KOBYLYANOV,L.M., redaktor; BALLOD,A.I.,tekh. red.

[Steam power plant LPU-1] Parosilovaia ustanovka LPU-1. Moskva, Gos.izd-vo selkhoz. lit-ry, 1955. 246 p. (MLRA 9:2)
(Steam power plants) (Rural electrification)

GERTS, Ye.V.; KREYNIN, G.V.

Determining the performance of membrane-equipped pneumatic units. Trudy Inst.mash.Sem.po teor.mash. 19 no.75:49-67 '59. (MIRA 13:1)

(Pneumatic machinery)

PHASE I BOOK EXPLOITATION SOV/4487

Akademiya nauk SSSR. Institut mashinovedeniya. Seminar po teorii mashin i mekhanizmov

Trudy, t. 20, vyp. 80 (Transactions of the Institute of the Science of Machines, Seminar on the Theory of Machines and Mechanisms, Vol. 20, No. 80). Moscow, 1960. 80 p. Errata slip inserted. 3,500 copies printed.

Editorial Board: I.I. Artobolevskiy (Resp. Ed.) Academician, G.G. Baranov, Professor, Doctor of Technical Sciences, M.L. Bykhovskiy, Doctor of Technical Sciences, V.A. Gavrilenko, Professor, Doctor of Technical Sciences, V.A. Zinov'yev, Professor, Doctor of Technical Sciences, A.Ye. Kobrinskiy, Doctor of Technical Sciences, N.I. Levitskiy, Professor, Doctor of Technical Sciences, N.P. Rayevskiy, Candidate of Technical Sciences, L.N. Reshetov, Professor, Doctor of Technical Sciences, and M.A. Skuridin, Professor, Doctor of Technical Sciences; Ed. of Publishing House: V.A. Sokolova-Chestnova; Tech. Ed.: S.G. Tikhomirova.

PURPOSE: This collection of articles is intended for technical personnel interested in the theory of machines and mechanisms.

Card 1/4

COVERAGE: The collection contains four articles submitted to the Seminar on the Theory of Machines and Mechanisms. The foreword to the collection was written by I.I. Artobolevskiy, Academician, Scientific Director of the Seminar. Included in the foreword are summaries of the four articles. References accompany three of the articles. All references are Soviet, with the exception of one translation from English.

TABLE OF CONTENTS:

Transactions of the Institute (Cont.) SOV/4487

a mechanism. Two methods of the synthesis of four-bar linkages are discussed and preparatory work for their solution by computers is described. The author concludes that the method of the quickest triggering action may be used to determine a kinematically sound mechanism.

AVAILABLE: Library of Congress

Card 4/4

VK/wrc/gmp
11-18-60

Kreynin, G. V.

PHASE I BOOK EXPLOITATION SOV/5175

Gerts, Yelena Vasil'yevna, and German Vladimirovich Kreynin

Teoriya i raschet silovykh pnevmaticheskikh ustroystv (Theory and Design of Pneumatic Devices for Actuation of Machines) Moscow, Izd-vo AN SSSR, 1960. 177 p. Errata slip inserted. 4,500 copies printed. (Series: Problemy teorii mashin)

Sponsoring Agency: Akademiya nauk SSSR. Institut mashinovedeniya.

Editorial Board: Resp. Ed.: I. I. Artobolevskiy, Academician; A. A. Blagonravov, Academician, N. G. Bruyevich, Academician, V. I. Dikushin, Academician, S. V. Serensen, Academician of the Academy of Sciences UkrSSR, S. V. Pinegin, Doctor of Technical Sciences, N. I. Levitskiy, Doctor of Technical Sciences, Professor, F. M. Dimentberg, Doctor of Technical Sciences, A. Ye. Kobrinskiy, Doctor of Technical Sciences, N. P. Rayevskiy, Candidate of Technical Sciences; Corresponding Secretary: A. P. Bessonov, Candidate of Technical Sciences; Resp. Ed.: I. I. Artobolevskiy, Academician; Ed. of Publishing House: G. B. Gorshkov; Tech. Ed.: I. A. Makogonova.

Card 1/7

Theory and Design (Cont.) SOV/5175

PURPOSE: This book is intended for engineers dealing with pneumatic systems used in automatic production control.

COVERAGE: The authors investigate basic problems connected with the theory of piston- and diaphragm-type pneumatic actuating devices used in automatic machines and production lines. The designs of such installations are considered. Electronic computers were used for solving equations required for calculating the pneumatic mechanisms described. The results of numerous calculations made by the authors on the model MN-M electronic analog computer and on the "Strela" and "Ural" digital computers are presented in the form of graphs, tables, and nomograms. These data can also be used in the calculation of other pneumatic devices of the same type. The experiments were conducted in the Laboratory for Mechanisms of Automatic Machines of the Institut Mashinovedeniya (Institute of Machine Science), the Machine-Tool Laboratory of the Stankostroitel'nyy zavod imeni S. Ordzhonikidze (Machine-Tool Plant im. S. Ordzhonikidze), and in the Laboratory for Pneumatic Accessories of the Plant "Elektrik" (The Electrician).

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The constructions done by the spetsial'noye konstruktorskoye byuro No.1 po stankostroyeniyu Mosgorsovnarkhoza (Special Machine-Tool Design Office No.1 of the Mosgorsovnarkhoz), by the nauchno-issledovatel'skiy institut tekhnologii avtomobil'noy promyshlennosti (Technological Scientific Research Institute of the Automobile Industry), and by the eksperimental'nyy nauchno-issledovatel'skiy institut metallorezushchikh stankov (Experimental Scientific Research Institute of Metal-Cutting Machine Tools) were tested and results obtained by these institutes were used. Chapters 1, 3, and 4 were written by Ye. V. Gerts. G. V. Kreynin wrote Chapters 2, 5, and 6. The authors thank M. L. Bykhavskiy, Doctor of Technical Sciences, for his work with the analog computer; V. D. Kozhin and B. P. Vilkov, Senior Laboratory Technicians, for participating in the investigation described in Chapter 6; and I. I. Artobolevskiy and A. A. Blagonravov, Academicians, and N. I. Levitskiy, Doctor of Technical Sciences, for their assistance and interest during the preparation of the book. There are 126 references: 108 Soviet, 13 English, 3 German, 1 Czech, and 1 French.

10.2000

S/179/60/000/03/030/039
E191/E481

AUTHOR: Kreynin, G.V. (Moscow)

TITLE: Outflow of a Gas Through a Long Pipeline with a Throttle at the End

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh nauk, Mekhanika i mashinostroyeniye, 1960, Nr 3, pp 165-166 (USSR)

ABSTRACT: The outflow of a gas from a container with constant pressure through a long pipeline with a throttling orifice at the end is considered. It is assumed that an adiabatic process takes place. The motion of the gas along the pipeline takes place at constant temperature which is the temperature of the surrounding medium. It is assumed that the temperature drop in the process of adiabatic flow occurs in a relatively short length of the pipeline and does not affect the nature of the motion of the gas. The length of the pipeline is assumed sufficient to ensure that the friction losses in the pipe are irrecoverable. If this condition is not fulfilled, local resistances are replaced by equivalent lengths of pipe. A system of equations is given which describes the process. The

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S/179/60/000/03/030/039
E191/E481

Outflow of a Gas Through a Long Pipeline with a Throttle at the End

outflow coefficient of the system is defined as the ratio of the mass flow obtained to the mass flow from a container through the same orifice at the end of a short pipe. The results are plotted as a family of curves giving the outflow coefficient as a function of the total pressure ratio with the pipe friction coefficient as a parameter. When the total pressure ratio changes from 0 to 0.95, the outflow coefficient changes from 0.68 to 0.55 for a ratio of pipe to orifice areas of 2 and a pipe friction factor of 5. For practical applications it is often sufficient to ignore this variation and consider a mean outflow coefficient for the entire pressure range. This mean coefficient is plotted in Fig 3 against the pipe to orifice area ratio with different pipe friction coefficients. For a pipe friction factor of 5, the mean outflow coefficient varies between 0.35 to 0.88 when the area ratio increases from 1 to 4. There are 3 figures and 2 Soviet references.

SUBMITTED: February 12, 1960

Card 2/2

GERTS, Ye.V.; KREYNIN, G.B.

Design of a pneumatic piston unit with two-way action. Trudy Inst.mash.Sem.po teor.mach. 20 no.80:36-63 '60.

(Pneumatic control) (MIRA 13:9)

KREYNIN, G. V.

Cand Tech Sci - (diss) "Several problems of the analysis and synthesis of pneumatic equipment." Moscow, 1961. 19 pp; (Academy of Sciences USSR, Inst of Automatics and Telemechanics); 220 copies; free; (KL, 6-61 sup, 219)

S/586/61/022/085/002/003
D234/D304

AUTHORS: Gerts, Ye.V., Kreynin, G.V. and Polyakova, M.V.

TITLE: Use of electronic computers for the design of pneumatic devices

SOURCE: Akademiya nauk SSSR. Institut mashinovedeniya. Seminar po teorii mashin i mekhanizmov. Trudy, v. 22, no. 85/86. Moscow, 1961, 68-86

TEXT: The authors deal only with the interval of displacement of the piston and two-sided pneumatic device with constant load. The equations of motions of the device are quoted from previous papers and the results of solution by an electronic simulating device and by a digital 'Strela' computer are considered. Oscillograms and graphs of the solutions in dimensionless quantities are given for several values of parameters and analyzed in detail. It is stated that the solutions by simulating devices were checked on a digital computer and found to be accurate up to 5-7%. The graphs and oscillograms allow the time of piston displacement to be determined for a wide range of constructions of pneumatic devices. There are 11 figures, 1 table and 9 Soviet-bloc references.

SUBMITTED: November 22, 1960

Card 1/1

KREYNIN, G.V.

Some problem in the analysis and synthesis of pneumatic piston devices. Trudy Inst.mash.Sem.po teor.mash. 22 no.85/86:154-167 '61. (MIRA 14:12)

(Pneumatic machinery)

KREYNIN, G. V.

Selecting dimensions for the piping of pneumatic actuating devices. Stan. i instr. 33 no.10:23-26 O '62. (MIRA 15:10)

(Machine tools—Pneumatic driving)

ZENCHENKO, Vladimir Petrovich; KREYNIN, German Vladimirovich; PROKOF'YEVA, N.B., red.izd-va; SIMKINA, G.S., tekhn.red.

[Air controls automatic machines; pneumatic control systems for machinery]Vozdukh upravliaet avtomatami; pnevmaticheskie sistemy mashin-avtomatov. Moskva, Izd-vo Akad. nauk SSSR, 1963. 108 p. (MIRA 16:4)

(Pneumatic control)

GERTS, Ye.V.; KREYNIN, G.V.; SHCHERBAKOV, V.I., inzh., retsenzent; GORBOV, P.S., inzh., red.

[Dynamics of pneumatic drives in automatic machinery] Dinamika pnevmaticheskikh privodov mashin-avtomatov. Moskva, Izd-vo "Mashinostroenie," 1964. 235 p.
(MIRA 17:6)

ACCESSION NR: AT4042438 8/0000/64/000/000/0067/0075

AUTHOR: Gerts, Ye. V., Kreynin, G. V.

TITLE: Some problems in the dynamics of the control devices of pneumatic systems of mechanical automata

SOURCE: Vsesoyuznoye soveshchaniye po pnevmo-gidravlicheskoy avtomatike. 5th, Leningrad, 1962. Pnevmo- i gidroavtomatika (Pneumatic and hydraulic control); materialy* soveshchaniya. Moscow, Izd-vo Nauka, 1964, 67-75

TOPIC TAGS: automation, pneumatic control system, automatic control system, mechanical automation, pneumatic drive, pneumatic distributor, slide valve

ABSTRACT: The results of a theoretical and experimental investigation into the dynamics of the control devices (air distributors, logical elements) of pneumatic systems of mechanical automata are presented. Although these systems make use of distributors with electric, pneumatic and electro-pneumatic drive, the authors restrict their study to distributors with pneumatic drive only. The slide valve is considered as the usual working element of the distributor pneumatic drive assembly, its operation is described, and the equations characterizing the pressure and antipressure in the slide valve cavities are

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ACCESSION NR: AT4042438

derived. The problem of the filling or emptying of a tube through one end with a blind chamber of small volume present at the other end is considered, and the law governing the change in pressure in the slide valve control cavity, located at the end of the tube, is analyzed. The critical pipeline length for valves with two-way pneumatic drive is determined. A detailed analysis is presented on oscillograms of type ENIMS distributor, along with certain other oscillograms plotted during the testing of distributors with different pipeline lengths in the control lines (from 0.5 to 50 m) and different through sections for the tube (0.3, 0.4 and 0.5 cm). Logical elements of the OR channel and the membrane relay type are discussed. The authors demonstrate that, in many cases, a dynamic analysis of a pneumatic control system is possible merely by considering the filling and emptying of constant-volume vessels through long pipelines. Orig. art. has: 10 formulas and 6 figures.

ASSOCIATION: none

SUBMITTED: 29Jan64 ENCL: 00

SUB CODE: IE NO REF SOV: 006 OTHER: 000

Card 2/2

GERTS, Ye. V. (Moskva); KREYNIN, G. V. (Moskva)

Investigating the unsteady motion of the piston of a pneumatic device. Izv. AN SSSR. Mekh. i mashinostr. no.3:158-161 My-Je '64. (MIRA 17:7)

L 24529-65 EWT(d)/EWP(e)/EWA(d)/EWP(v)/T/EWP(k)/EWP(h)/EWP(l) Pf-4
AM4045985

BOOK EXPLOITATION

Gerts, Ye. V.; Kreynin, G. V.

S

B4

The dynamics of pneumatic drives in automatic machinery (Dinamika pnevmaticheskikh privodov mashin-avtomatov) Moscow, Izd-vo Mashinostroyeniya, 1964. 235 p. illus., biblio. 5500 copies printed. Reviewer: Engineer V. I. Shcherbakov; Editor: Engineer P. S. Gorbov; Editor of the publishing house: I. Ya. Merenskaya; Technical editors: N. P. Salazkov, N. V. Timofeyeva; Proofreader: V. A. Polonskiy.

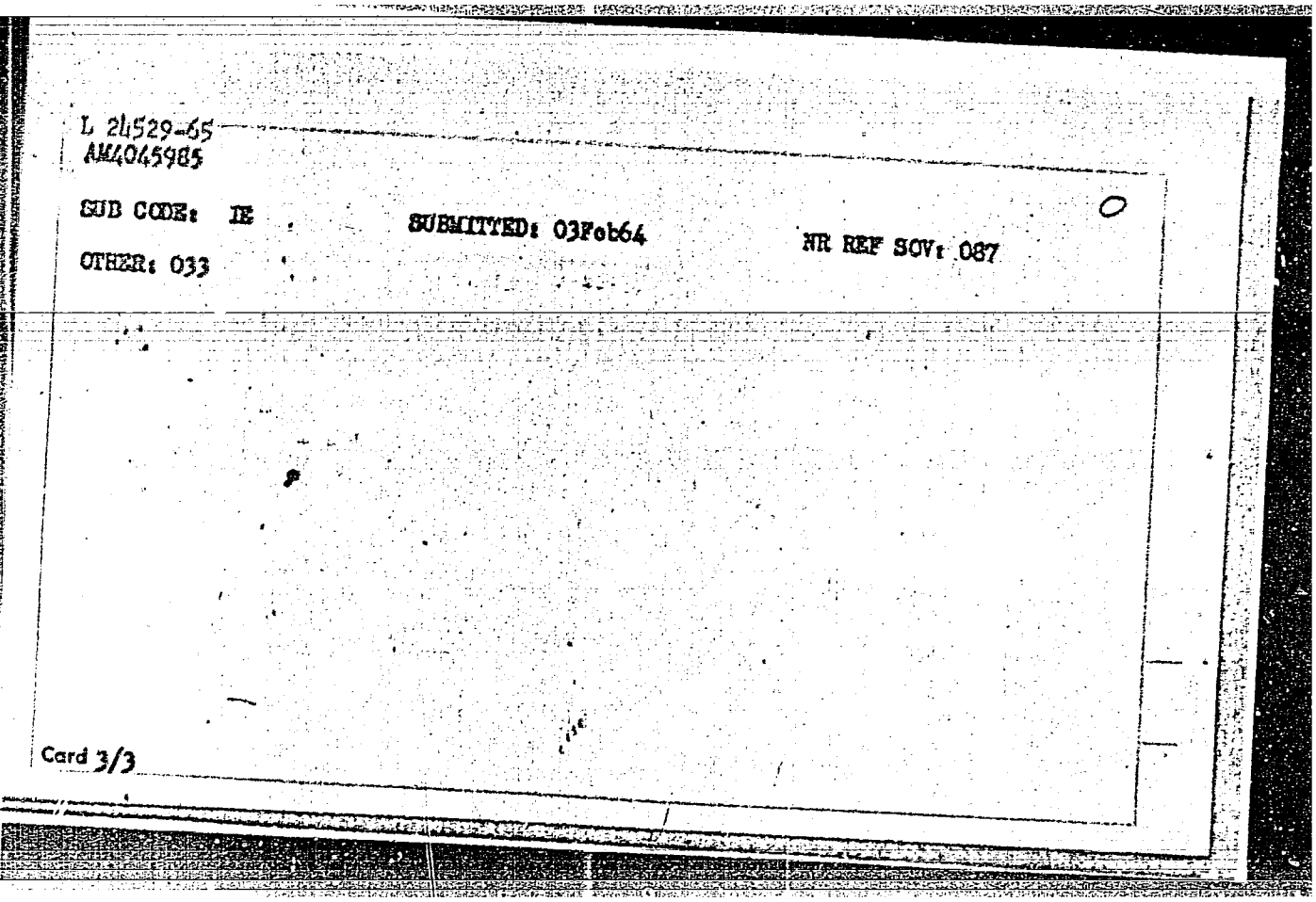
TOPIC TAGS: pneumatic drive, automatic machinery, machine design, dynamic design, time of wear, single action pneumatic drive, reversible pneumatic drive, throttling

PURPOSE AND COVERAGE: This book is intended for engineering designers and scientific personnel and may be useful to students specializing in machine design. The results of theoretical and experimental research on pneumatic drives in automatic machinery and automatic lines are given. Methods for dynamic design of

Card 1/3

pneumatic drives, graphs and nomograms permitting rapid determination of the time of wear of pneumatic devices, and a comparative analysis of calculated and test data are presented.

TABLE OF CONTENTS:



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SUB CODE: IE SUBMITTED: 03Feb64 NR REF SOV: 087

OTHER: 033

Card 3/3

L 32083-65 EWT(d)/EWP(v)/EWP(h)/EWP(k)/EWP(l) Po-4/Pq-4/Pf-4/Pg-4/Pk-4/Pl-4
ACCESSION NR: AT4049379 IJP(c) BC S/2905/64/000/100/0036/0047

AUTHOR: Gerts, Ye. V.; Kroynin, G.V.; Polyakova, M.A.

53
B+1

TITLE: Research on the dynamics of pneumatic control devices for different rates of motion

14

SOURCE: AN SSSR. Institut mashinovedeniya. Teoriya mashin i mekhanizmov, no. 100, 1964, 36-47

9

TOPIC TAGS: automation, automatic control system, pneumatic control system, control system dynamics, biased control device, lift operation

ABSTRACT: Continuing earlier work with a view toward the improvement of control apparatus for automatic machines, the authors tested singly and doubly biased control apparatus both with and without springs. Assuming the pressure of the whole system to be equal to the pressure in the main line, the dimensionless pressure (ratio of pressures) becomes 1 and the equations describing the machine action can be combined and integrated, with the factor representing the characteristic coordinate of position of the machine equal to 1, to give

$$\tau_s = N\sqrt{\frac{2}{1-n_k}}.$$

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ACCESSION NR: AT4049379

D

where T_s = time for the period of operation, λ_a = characteristic load with respect to the atmosphere (a constant for each case); N = dimensionless parameter of construction. The resultant lines, for varying varying values of λ_a, are given in Fig. 1 of the Enclosure; dotted lines represent the function obtained under these assumptions, and curved lines represent actual conditions for an ascending lift. The divergence of the actual curves for varying force on a descending lift from those calculated with the simplifying assumptions is greater, but is minimized when $0 < N \leq 0.8$, since the dimensionless pressure becomes nearly constant. Addition of a spring adds the factor of spring resilience to the descriptive equations. Comparative graphs were plotted with and without simplifying assumptions for varying spring rigidity and load, for both forward and backward control. In the former case correspondence was close, but in the latter case, increasing rigidity both depressed the curves and caused an increase of constant divergence. The dynamics of doubly-biased control apparatus must be described with three equations, adding factors for the effective area of the piston and for the exhaust system. Decreasing the load for decreasing values of the load and exhaust system factor greatly increases the divergence between actual curves and curves calculated with simplifications. For all cases considered, the operating velocity was determined as a function of λ_1 and η_e for singly biased apparatus and of the exhaust system for

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ACCESSION NR: AT4049379

doubly biased apparatus. In the former case, N=5 produced smooth, uniformly increasing curves which increased with η. In the latter case, curves decreased with increasing η. Orig. art. has: 19 formulas and 10 figures.

ASSOCIATION: none

SUBMITTED: 24Apr62 ENCL: 01 SUB CODE: IE

NO REF SOV: 003 OTHER: 000

Card 3/4

L 32053-65

ACCESSION NR: AT4049379

ENCLOSURE: 01

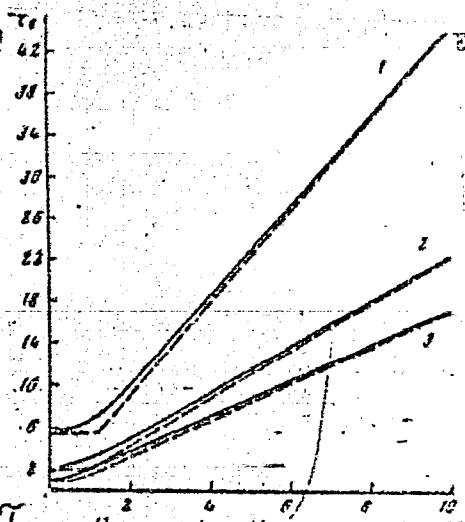

Fig. 1. Dependence of time τ_s on the construction parameter N for an ascending lift.

1) $\eta_s = 0.9$; 2) $\eta_s = 0.8$; 3) $\eta_s = 0.5$

Card 4/4

GERTS, Ye.V. (Moskva); KREYNIN, G.V. (Moskva); FROLOV, M.L. (Moskva)

Experimental determination of the consumption ratio of pneumatic systems. Mashinovedenie no.2:48-53 '65.

(MIRA 18:8)

L 31286-66 EWP(k)/EWT(d)/EWT(m)/EWP(h)/T/EWP(l)/EWP(v) DJ/BC

ACC NR: AP6020245 SOURCE CODE: UR/0380/66/000/001/0051/0058

AUTHOR: Kreynin, G. V.(Moscow); Frolov, M. L.(Moscow)

ORG: none

TITLE: Determination of optimal parameters of a pneumatic hydraulic drive control system

SOURCE: Mashinovedeniye, no. 1, 1966, 51-58

TOPIC TAGS: pneumatic device, pneumatic control system, hydraulic equipment, reliability engineering, signal transmission, automatic control design

ABSTRACT: In order to overcome the shortcomings of electromagnetic control systems used for control of the hydraulic drives of machine tools, automatic production lines, etc., the USSR is now series-producing small pneumatic devices for this purpose, part of the USEPPA (Universal System of Elements of Industrial Pneumo-Automatics) system. They can be used to replace electromagnet relay systems. The changeover not only provides higher reliability of the control system; it also makes it more fire and explosion safe. Dividing the pneumatic control process into three stages (transmission of pneumatic signal from transducer to control system; processing of signals in control unit; transmission of output signal from control system to hydraulic drive system), the authors analyse the operation of such control systems step-by-step, to aid planners in designing such control systems. With proper selection of element parameters, they report, the speed of operation of such a control system can be of the same order as that of an electrical system. Orig. art. has: 6 figures and 5 formulas. [JPRS]

SUB CODE: 13, 09/ SUBM DATE: 12Sep65/ ORIG REF: 005 UDC: 62-525

Card 1/1

SOURCE CODE: UR/0000/66/000/000/0029/0035

AUTHOR: [illegible], Ya. V.; [illegible], G. V.; Polyakova, M. A.

ORG: none

TITLE: Use of electronic computers for the synthesis of pneumatic relay control systems

SOURCE: AN SSSR. Institut avtomatiki i telemekhaniki. Pnevmoavtomatika (Pneumatic automation). Moscow, Izd-vo Nauka, 1966, 28-35

TOPIC TAGS: pneumatic control system, boolean function, binary logic, mathematic logic, computer program logic

ABSTRACT: The authors propose a simplified method for expressing relay logic operations in terms of boolean logic and for reducing the amount of effort necessary to decrease the required number of elements for a given function to a minimum. The method uses unipolar numerical equivalents representing all given components of the system. The [illegible] refer to one main component which has a numerical equivalent [illegible]. In the [illegible] interpretation of the boolean function, this means that the origin of the component is located. In view of the great difficulty of locating an absolute minimum form of a boolean function with many variables, the problem is reduced to finding several minimum forms [illegible] the best one. The initial [illegible] ulation is given in

Card 1/2

L 09270-67

ACC NR: AT6021724

the form of a set of [illegible] affirmative next [illegible] and forbidden arguments corresponding to the [illegible]. These numerical equivalents are expressed in binary system, i.e., in the form of [illegible], the binary numbers are written in octal system. [illegible] for conversion, binary [illegible] into their octal equivalents in [illegible]. A series of [illegible] operations with Boolean logic is performed to optimize the selected set of octal [illegible] numbers. Orig. art. has: 5 [illegible].

SUB CODE: 12/ SUBM DATE: 03Feb66/ ORIG REF: 004/ OTH REF: 001

ACC NR: AP6024363 SOURCE CODE: UR/0280/66/000/002/0059/0064

AUTHOR: Gerts, Ye. V. (Moscow); Kreynin, G. V. (Moscow); Polyakova, M. A. (Moscow)

ORG: none

TITLE: On an algorithm for the simplification of Boolean functions with the aid of a general-purpose computer

SOURCE: AN SSSR. Izvestiya. Tekhnicheskaya kibernetika, no. 2, 1966, 59-64

TOPIC TAGS: ~~general-purpose~~ computer, Boolean function, algorithm, approximate solution / / Minsk-1 ~~general-purpose~~ computer

ABSTRACT: An approximate method of simplifying the Boolean functions of a large number of variables specified by the constituents of the unity and zero is presented. The method is based on conversion of the Boolean function F of n variables to the relative function F^t which makes it possible to reduce the volume of scanning. This method is most effective in the case of weakly defined Boolean functions. E.g. when solving the problem with the aid of the Minsk-1 general-purpose computer and using the direct-access memory alone, the number of variables may be 30, while the number of obligatory and prohibited constituents (elementary conjunct-

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ions of variables determining the function and causing its value to be either 0 or 1) may be of the order of 1400. (The conversion of F to F^t is governed by the following rules: 1. From the obligatory terms α_i { i = 1, 2, ..., t } of the function F some successive t-th order term is arbitrarily selected and is henceforth referred to as the base term and denoted by α_0; 2. Each of the terms α_i and the prohibited terms β_j {j = 1, 2, ..., m} is compared with α_0; if the values of n letters x_p {p = 1, 2, ..., n} and α_i (or β_j) coincide, 0 is entered in the table of the F^t function, but if they do not coincide, 1 is entered in that table. The rupidity of action of the algorithm depends chiefly on the power of the α_i and β_j sets. E.g. for n = 8 and t + m = = 258 it takes an average of ~5 sec to obtain one prime implicant with the aid of the Minsk-1 computer. Orig. art. has: 3 tables, 12 formulas.

SUB CODE: 09, 12/ SUBM DATE: 28Jan64/ ORIG REF: 002/ OTH REF: 001

Card 2/2

AC NR: AM6028927 Monograph UR/

Gerts, Ye. V.; Zenchenko, V. P.; Kreynin, G. V.

Synthesis of pneumatic drives (Sintez pnevmaticheskikh privodov) Moscow, Izd-vo "Mashinostroyeniye," 1966, 210 p. illus., biblio. 6500 copies printed.

TOPIC TAGS: pneumatic device, pneumatic logic divice, automatic control design, pneumatic control system

PURPOSE AND COVERAGE: This book is intended primarily for design engineers and research scientists; however, it can be also used by students specializing in machinebuilding. Structural synthesis of discrete control systems in pneumatically operated automatic machines by means of mathematical logic devices is presented. Pneumatic means for carrying out logic operations are shown in examples, and methods of designing control systems with potential and pulse signals are considered.

TABLE OF CONTENTS [abridged]:

Card 1/2 UDC: 621.83:621.5.01

ACC NR: AM6028927

SUB CODE: 13/ SUBM DATE: 31Mar66/ ORIG REF: 077/ OTH REF: 084

Card 2/2

KREYNIN, I., inzhener.

New leveling instruments. Stroitel' 2 no.3:16-17 Mr '56.
(Level (Tool)) (MLRA 9:12)

L 04611-67 FSS-2/EWT(l)/EWT(m)/FCC/EWP(t)/ETI IJP(c) JD/JT/GW

ACC NR: AP6033397 SOURCE CODE: UR/0293/66/004/005/0740/0747

AUTHOR: Grigor'yeva, G. M.; Gumennyy, V. A.; Kreynin, L. B.; Landsman, A. P. 113 110 B

ORG: none

TITLE: Investigation of the radiation resistance of silicon photoconverters (according to experimental data obtained by the "Electron-3" artificial Earth satellite)

SOURCE: Kosmicheskiye issledovaniya, v. 4, no. 5, 1966, 740-747

TOPIC TAGS: artificial earth satellite, silicon, cosmic radiation, radiation belt, radiation damage, radiation protection, photoelectric detection equipment/ Electron-3 artificial earth satellite

ABSTRACT: "Electron-3" had an apogee of 7040 km and a perigee of 405 km. The inclination angle of its orbital plane to the equatorial plane was 60° 52'. As it orbited the Earth, the satellite intersected regions of intensive corpuscular radiation in the inner and outer radiation belts. Eight DSE experimental photoelectric detectors were installed on "Electron-3". Each detector consisted of a group of several photocells connected in series. The cells were made from p-type silicon into which phosphorus had been diffused. Both coated and uncoated detectors were used. The rapid deterioration of unprotected photocells was due principally to the effect of intensive low-energy proton fluxes (0.1 to 0.5 Mev). The presence of very thin coatings considerably reduced the rate of deterioration. Intensive low-energy proton fluxes (0.2 to 0.3 Mev) with a path length of the order of the depth of the n—p transition caused a sharp decrease in the open-current potential of unprotected photo-

Card 1/2 UDC: 539.104:621.383.8

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ACC NR: AP6033397

cells. Photocell damage produced by electrons on the "Electron-3" was slight. Measurements carried out over three months showed no drop in current in photocells protected with 3-mm-thick glass. Calculations showed that solar cells with 3-mm coatings could operate at least four years with a current reduction no greater than 25 percent. The investigation proved the feasibility of predicting how solar cells subjected to intensive cosmic radiations will react. The authors thank E. N. Sosnovets for computing the integral fluxes of protons and electrons for the orbit of "Electron-3" and N. V. Shavrin and M. M. Koltun for discussing the experimental results. Orig. art. has: 6 figures and 2 tables.

SUB CODE: 04, 22 / SUBM DATE: 28Sep65/ ORIG REF: 003/ OTH REF: 005/ ATD PRESS: 5100

Card 2/2

KREYNIN, L. S.

USSR/Medicine - Microbial Antagonism Nov 53

"A Reply to L. S. Kreynin's Article Critizing My Article on Microbiol Antagonism and Antibiotics [no refs]," Prof L. G. Perets

Zhur Mikro, Epid, i Immun, No 11, pp 71-75

In defending himself against accusations by Kreynin made on ideological grounds, Perets discusses in considerable detail work by himself, by Kreynin, and by other investigators on the antibiotic effects of saprophytic microorganisms, particularly B. coli. Stresses his (Perets') opinion

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(based on expts by himself and P. S. Kupalov) that action on the vegetative nervous system has a sharp effect on the condition of the intestinal microflora and that there is interdependence between the microorganism exposed to external influences and the intestinal microflora.

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KREYNIN, L.S.

Atypical growth of Flexner's dysenteric bacillus on bactoagar. Lab. delo 2 no.5:25-26 S-O '56. (MLRA 9:11)
(BACTERIA, PATHOGENIC)
(BACTERIOLOGY--CULTURES AND CULTURE MEDIA)

KREYNIN, L.S., kandidat meditsinskikh nauk

M.G.Kichenko's rosolic acid medium for detecting the coli bacillus in water in which hands and articles of general use were washed. Gig. i san. 21 no.9:81 S '56. (MLRA 9:10)

(ESCHERICHIA COLI, culture
in rosolic acid medium for determ. in washouts of hands & objects of daily use)
(CULTURE MEDIA
rosolic acid medium for determ of E. coli in washouts of hands & objects of daily use)
(ACIDS
same)

BEYLIN, I.B., podpolkovnik meditsinskoy sluzhby, prof.; KREYTN, L.S., podpolkovnik meditsinskoy sluzhby, kand.med.nauk

Influence of streptomycin and BCG vaccination on the course of tuberculosis in guinea pigs with radiation sickness. Voen.-med. zhur. no.8: 31-35 Ag'58. (MIRA 16:7)
(STREPTOMYCIN) (BCG VACCINATION)
(TUBERCULOSIS IN ANIMALS) (RADIATION SICKNESS)

KREYNIN, L.S.

Recovery of dysentery germs from persons in whom coli bacilli are agglutinated by dysentery sera; author's abstract. Zhur.mikrobiol. epid. i immun. 29 no.7:121 Jl '58 (MIRA 11:8)
(SHIGELLA PARADYSENTERIAE)
(ESCHERICHIA COLI)

BARSKIY, B.I., kand.med.nauk, KREYNIN, L.S., kand.med.nauk, BLYUMBERG, N.A. kand.med.nauk., GOKHFEL'D, E.T. (Moskva)

Antibiotic treatment of cholecystitis in young subjects.
Klin.med. 36 no.11:148-151 N '58 (MIRA 11:12)
(CHOLECYSTITIS, ther.
antibiotics in young subjects (Rus))
(ANTIBIOTICS, ther. use
cholecystitis in young sujbect (Rus))

KREYNIN, L.S.

Concerning improvement in the methods of collecting fecal masses for the detection of dysentery bacilli. Lab.delo 5 no.6:39 N-D '59. (MIRA 13:3)

(DYSENTERY--BACTERIOLOGY) (FECES)