Superlinearity in the Luminescence and Photo-conductivity Phenomena and the Rose-Bube Theory

erroneous. On the other hand the results are in good agreement with the main ideas of the two-step theory (Refs 3,4) which assumes a rise of the quantum yield β with E. There are 9 references, 6 of which are Soviet and 3 English.

SUBMITTED: July 10, 1958

Card 3/3

L 11626-66 EWT(1)/EWT(m)/EWP(t)/ETI IJP(c) JD

ACC NR: AP5025307 SOURCE CODE: UR/0051/65/019/004/0635/0637

AUTHOR: Dubenskiy, K.K.; Kariss, Ya. E.; Ryskin, A.I.; Feofilov, P.P.; Khil'ko, G.I.

ORG: none

TITLE: Determination of the effective cross section of collisions of the second kind between mercury and zinc atoms

SOURCE: Optika i spektroskopiya, v. 19, no. 4, 1965, 635-637

TOPIC TAGS: collision cross section, mercury, zinc, fluorescence spectrum

ABSTRACT: The collision cross section was determined at 736K at high values of ΔE (the energy difference between the levels of the colliding atoms) for the Hg-Zn pair with an energy difference in levels Hg $6\,^3P_1$ and Zn $4\,^3P_1$ of 6911 cm^{-1}. The determination was based on the relative intensity of sensitized fluorescence of Zn 3076 Å ($4\,^3P_1 - 4\,^1S_0$) and Hg 2537 Å ($6\,^3P_1 - 6\,^1S_0$). The effective collision cross section was determined from the formula

$$\langle \sigma v \rangle = \frac{I_{Zn}}{I_{Hg}} \frac{A_{Zn}}{N_{Hg}} \frac{\nu_{Hg}^2}{\nu_{Zn}^2} \frac{\int_{-\infty}^{+\infty} \left[1 - e^{-k_{Hg}(v)l}\right] dv}{\int_{-\infty}^{+\infty} \left[1 - e^{-k_{Zn}(v)l}\right] dv}. \quad (1)$$

UDC: 539.186.3:546.49:546.47

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R001446510006-4

L 11626-66

ACC NR: AP5025307

where $\frac{I_{Zn}}{I_{Hg}}$ is the relative intensity of the fluorescence lines Zn 3076 Å and Hg 2537 Å; A_{Zn} is the probability of a spontaneous transition for zinc; N_{Hg} is the concentration of mercury atoms in the container; ν_{Hg}, ν_{Zn} are the frequencies of the fluorescence lines of mercury and zinc; l is the thickness of the luminescent layer. The value of $\langle \sigma v \rangle$ was found to be 5×10^{14} cm^3 sec^{-1}. If in order to evaluate σ it is assumed that v is the most probable velocity of the relative motion of zinc and mercury atoms, then $\sigma \sim 1 \times 10^{-18}$ cm^2. Orig. art. has: 2 formulas.

SUB CODE: 07, 20 / SUBM DATE: 26Dec64 / ORIG REF: 001 / OTH REF: 007

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R001446510006-4"

RYSKIN, A.I.; TKACHUK, A.M.; TOLSTOY, N.A.

Optical properties of cyanoplatinate compounds. Part 2. Opt. i spektr. 17 no.5:724-727 N '64. (MIRA 17:12)

MALYSHEV, G.M.; RYSKIN, A.I.

Applicability of fiber optics in a setup consisting of a Fabry-Perot interferometer and an electron-optical converter. Opt. i spektr. 17 no.5:799 N '64. (MIRA 17:12)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R001446510006-4"

L 15557-66 EWT(1) AT

ACC NR: AP6004420 SOURCE CODE: UR/0051/66/020/001/0172/0173

AUTHOR: Reut, Ye. G.; Ryskin, A. I.

ORG: none

TITLE: Radiative levels of the Pr^3 ion in crystals of the scheelite type

SOURCE: Optika i spektroskopiya, v. 20, no. 1, 1966, 172-173

TOPIC TAGS: praseodymium tungstate, molybdate, calcium compound, lead compound, phosphor crystal, stimulated emission, electron energy level, solid state physics

ABSTRACT: The authors studied the absorption and luminescence spectra of $CaWo_4$-Pr and $PbMoO_4$-Pr crystals in the 3000-25,000 cm^{-1} region to determine the mechanism responsible for stimulated radiation of the trivalent praseodymium ion in crystals of the scheelite type. The duration of the excited state for various luminescent transitions was also studied. The experimental data indicate that transitions from the $^1G_4$ level of the Pr^3 ion in scheelite crystals are non-radiative and that the emission line at 1.0468 μ is due to the $^1D_2$-$^3F_4$ transition. A diagram is given showing the position of energy levels in the trivalent praseodymium ion in crystals

of the scheelite type. The short duration of the excited state for transitions from the $^3P_0$ level is apparently due to the fact that radiative transitions from this level "shunt" the non-radiative transition from the $^3P_0$ level to the $^1D_2$ level. Due to interaction with lattice vibrations, the population of these levels is determined by the Boltzmann rule; only the $^3P_0$ level is populated at 77°K. The authors are grateful to A. M. Morozov for preparation of the crystals and to P. P. Feofilov for interest in this work. Orig. art. has: 1 figure.

SUB CODE: 20/ SUBM DATE: 05Apr65/ ORIG REF: 003/ OTH REF: 002

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R001446510006-4"

RYSKIN, A.I.; TKACHUK, A.M.; TOLSTOY, N.A.

Optical properties of cyanoplatinate compounds. Opt. i spektr. 17 no.4:565-570 O '64. (MIRA 17:12)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R001446510006-4"

ACC NR: AP6033558 SOURCE CODE: UR/0181/66/008/010/2974/2976

AUTHOR: Ryskin, A. I.

ORG: none

TITLE: Influence of relative dimensions of the ions of the host and impurity ions on the macrostructure of activated crystals

SOURCE: Fizika tverdogo tela, v. 8, no. 10, 1966, 2974-2976

TOPIC TAGS: activated crystal, rare earth element, impurity center, crystal symmetry

ABSTRACT: This is a continuation of earlier work (Opt. i spektr. v. 21, no. 5, 1966) devoted to the types of centers produced by the activating material in a crystal (Pr^{3+} in $PbMoO_4$). Inasmuch as the results obtained in the earlier investigation were unique, and the Pr^{3+} ion produced a large number of other lower-symmetry activation centers in $CaWO_4$, which have the same structure as $PoMoO_4$, the author proposes that the difference is connected with the closeness of the ionic radii of Pr^{3+}, Ca^{2+} in the host, and Na^{+} (used for charge compensation). It is furthermore proposed that in principle predominantly tetragonal centers can be produced in a number of crystals of thescheelite type by varying the radii of the co-activating ions. All that is necessary for this purpose is to make the closeness of the rare-earth ion to the compensating ion convenient geometrically. Several examples from the literature, illustrating the presence of such an influence of the relative dimensions of the impurity ions and the host ions, are presented. The author thanks Ye. G. Reut for help and P. P. Feofilov for interest

ACC NR: AP6033558

in the work. Orig. art. has: 2 figures.

SUB CODE: 20/ SUBM DATE: 06Mar66/ ORIG REF: 003/ OTH REF: 001

ACC NR: AP/000026 SOURCE CODE: UR/0051/66/021/005/0564/0573

AUTHOR: Morozov, A. M.; Reut, Ye. G.; Ryskin, A. I.

ORG: none

TITLE: Luminescence, absorption, and level scheme of the Pr^{3+} ion in single crystals of lead molybdate

SOURCE: Optika i spektroskopiya, v. 21, no. 5, 1966, 564-573

TOPIC TAGS: lead compound, luminescence spectrum, absorption spectrum, color center, crystal symmetry

ABSTRACT: The purpose of the investigation was to establish the types of centers and the nature of symmetry of rare-earth ions in crystals of the scheelite type, particularly for ions such as Pr^{3+} for which electron paramagnetic resonance is not observed. The tests were made on $PbMoO_4$ and $CaWO_4$ with Pr^{3+} content 0.5 - 4.0 mol.%, grown by the Czochralski method from a stoichiometric oxide mixture. The absorption and luminescence spectra were investigated in the range from 25 000 to 3 000 cm^{-1}. The measurements were made on the crystals with 0.5% Pr concentration. The phenomenological procedure used to determine the level symmetry and the level splitting is described. The results show that the Pr^{3+} ion in crystals of the scheelite type can be situated in a tetragonal field with mirror-rotation fourfold axes, and that the impurity ions or defects that realize the charge compensation do not eliminate this axis. On the basis of the experiments, it is deduced that the most likely model

tetragonal center in scheelite is one in which the Pr^{3+} replaces a Pb^{2+} ion and is sufficiently screened from the action of the compensating charge. The presence of a number of weak lines in the spectrum demonstrates that this is not the only type of center present in the scheelite. The parameters of the crystalline field are determined. The authors thank M. N. Tolstoy for photographing part of the spectra in the infrared region, B. P. Zakharchenya and L. M. Kanskaya for supplying the apparatus for the Zeeman-effect investigation and help in the work, P. P. Feofilov for interest in the work and useful discussions, and Graduate Student of the Kazan' State University for participating in earlier stages of the experiment. Orig. art. has: 3 figures, 3 formulas, and 3 tables.

SUB CODE: 20/ SUBM DATE: 02Jul65/ ORIG REF: 007/ OTH REF: 007

Thursday, September 26, 2002 CIA-RDP86-00513R001446510006-4"

43119
S/181/62/004/011/018/049
B104/B102

24.2600

AUTHORS: Tolstoy, N. A., Khil'ko, G. I., Ryskin, A. I., and Trusov, A. A.

TITLE: The relation between the luminescence and photoelectric properties in a ZnS-Mn phosphor

PERIODICAL: Fizika tverdogo tela, v. 4, no. 11, 1962, 3177 - 3184

TEXT: The object here is to establish quantitative and kinetic relations between photoelectric aspects and the luminescence of the photo-semiconduction mechanism in the ZnS-Mn phosphor, which has the property of scintilative deexcitation of luminescence. ZnS-Mn (10^{-3} g/g) placed in a capacitor is excited by two successive light flashes from two flash lamps positioned in front of a concave mirror. The interval between the light pulses is varied automatically from 0.1 to 10 sec. Intervals greater than 10 sec are regulated by hand. The first ultra-violet light pulse produces in the capacitor a current pulse corresponding to the motion of electrons in the direction of the incident beam. The second yellowish-green light pulse produces a signal whose amplitude depends on the time interval $t_{dark} \equiv t_d$ light pulses. It reaches a maximum for a certain time

The relation between the luminescence... S/181/62/004/011/018/049
B104/B102

ASSOCIATION: Gosudarstvennyy opticheskiy institut im. S. I. Vavilova, Leningrad (State Optical Institute imeni S. I. Vavilov, Leningrad)

SUBMITTED: June 21, 1962

Card 3/3

KOVALEV, N.A.; TKACHUK, A.M.; SOKOLOV, V.A.; BURLAKOV, A.V.; RYSKIN, A.I.; MANSUROVA, Z.S.; YEPIFANOV, M.V.

Flare-up of ZnS phosphors and concurrence of the luminescence bands. Izv.AN SSSR. Ser. fiz. 25 no.3:399-405 Mr '61. (MIRA 14:2)
(Zinc sulfide spectra)

TOLSTOY, N.A.; TKACHUK, A.M.; RYSKIN, A.I.

Flare luminescence. Part 3: Effect of the intensity of exciting and de-exciting light. Opt. i spektr. 10 no.2:220-224 F '61. (MIRA 14:2)

(Luminescence)

20816

S/048/61/025/003/035/047
B104/B202

9.4160 (also 1137, 1395)

AUTHORS: Tolstoy, N. A., Tkachuk, A. M., Sokolov, V. A., Burlakov, A. V., Ryskin, A. I., Mansurova, Z. S., and Yepifanov, M. V.

TITLE: Flash-heating of ZnS-phosphors and concurrence of luminescence bands

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, v. 25, no. 3, 1961, 399-405

TEXT: This paper was presented at the 9th conference on luminescence (crystal phosphors), Kiyev, June 20 to 25, 1960. Flash heating of phosphors is related to an accumulation of electrons or holes which occurs in the interval between two excitations. Proceeding from the scheme suggested by Schön and Klasens the authors discuss the processes occurring in this connection with the aid of the scheme shown in Fig. 1. They explain the filling of the blue and red luminescence centers with holes in the case of steady excitation. They also discuss the mechanism of flash heating which leads to the concurrence of blue and red bands which had been described already by V. L. Levshin. On the basis of these considerations the authors study the dependence of the steady luminescence of short-wave bands on the intensity of the exciting light at different temperatures

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R001446510006-4

L 15258-65 EWT(m)/EWP(j) ESD-3/BSD/AFWL/ASD(a)-5/AS(mp)-2/AFMD(t)/APGC(b)/ESD(gs)/ESD(t) RM

ACCESSION NR: AP4048743 S/0051/64/017/005/0724/0727

AUTHORS: Ry*skin, A. I.; Tkachuk, A. M.; Tolstoy, N. A. B

TITLE: Optical properties of platinocyanide compounds. II. Absorption spectra and level scheme of the $[Pt(CN)_4]^{2-}$ ion in crystals of platinocyanide compounds

SOURCE: Optika i spektroskopiya, v. 17, no. 5, 1964, 724-727

TOPIC TAGS: platinum compound, optical spectrum, absorption spectrum, level scheme, absorption band, level transition

ABSTRACT: The absorption spectra of crystals of platinocyanides of barium, lithium, ytterbium, and erbium were investigated at temperatures 300, 77, 4.2K. It is shown that the long-wave absorption band of all crystals breaks up at 4.2K into two bands, which are ascribed to the transitions $5d_{z^2}(A_{1g}) \rightarrow 6p_z(A^*_{2u})$ and $5d_{yx,xx}(E_g) \rightarrow 6p_z(A^*_{2u})$.

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R001448510006-8

L 15258-65
ACCESSION NR: AP4048743

It is shown further that the level scheme proposed by C. Moncuit and H. Poulet (J. phys. rad. v. 23, 6, 353, 1962) for the complex $[Pt(CN)_4]^{2-}$ in platinocyanide crystals can be used to interpret the low-temperature absorption spectra. Some modifications of the level positions are made on the basis of a level scheme for the complex in an aqueous solution of the platinocyanide, previously discussed by the authors (Opt. i spektr. v. 17, 4, 1964). Orig. art. has: 3 figures and 1 table.

ASSOCIATION: None

SUBMITTED: 16Dec63 ENCL: 00

SUB CODE: OP, IC NR REF SOV: 001 OTHER: 004

Card 2/2

ZAKHARCHENYA, B.P.; RUSANOV, I.B.; RYSKIN, A.Ya.

Zeeman effect of a resonance line (4130 Å) in the spectrum of the CaF_2-Eu^{2+} crystal. Opt. i spektr. 18 no.6:999-1010 Je '65. (MIRA 18:12)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R001446510006-4

L 63960-65 EWT(1)/EWT(m)/EPF(c)/T/EWP(t)/EEC(b)-2/EWP(b) IJP(c)
JD/JW/GG

ACCESSION NR: AP5016172 UR/0051/65/018/006/0999/1010
539.184.28:548.0

AUTHOR: Zakharchenya, B. P.; Rusanov, I. B.; Ryskin, A. Ya.

TITLE: The Zeeman effect of the resonance line (4130 Å) in the spectrum of a CaF_2-Eu^{2+} crystal

SOURCE: Optika i spektroskopiya, v. 18, no. 6, 1965, 999-1010

TOPIC TAGS: Zeeman effect, optical resonance, spectrum line, paramagnetic resonance, calcium fluoride laser, calcium fluoride

ABSTRACT: Variation in the intensities of the Zeeman components of the 4130 Å "resonance" line in the spectrum of a CaF_2-Eu^{2+} crystal is experimentally studied at 4.2 and 1.7K. A Zeeman transition diagram is constructed on the basis of these experiments and group-theoretical analysis is conducted for the complex case of the Zeeman effect in a cubic crystal when the lower $^8S_{7/2}$ level is split into eight sublevels and the upper excited $^4\Gamma_8^+$ level is split into four sublevels. The behavior of the $^4\Gamma_8^+$ level in a magnetic field may be described by a spin Hamiltonian of the type $\mathcal{H} = g\mu S + f\mu S^3$.

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R001446510006-4

L 63960-65

ACCESSION NR: AP5016172

It was found that Zeeman splitting at 4130 Å results in circularly polarized components. Study of the Zeeman effect for this line shows that the spin-lattice relaxation time is very short for Zeeman sublevels of the excited state (less than $7 \cdot 10^{-7}$ seconds). The use of CaF_2-Eu^{2+} for optical detection of paramagnetic resonance in the excited state is discussed. "In conclusion, the authors consider it their duty to thank Ye. F. Gross and P. P. Feofilov for interest in the work and also V. P. Makarov and G. Bir for consultation." Orig. art. has: 4 figures, 4 formulas, and 4 tables. [14]

ASSOCIATION: none

SUBMITTED: 07May64 ENCL: 00 SUB CODE: SS, OP

NO REF SOV: 007 OTHER: 009 ATD PRESS: 4071

ACC NR: AT6034035 SOURCE CODE: UR/0000/66/000/000/0126/0130

AUTHORS: Zakharchenya, B. P.; Rusanov, I. B.; Ryskin, A. Ya.

ORG: none

TITLE: Magneto-optic effects in the spectrum of a CaF_2-Eu^{2+} crystal

SOURCE: Simpozium po spektroskopii kristallov, soderzhashchikh redkozemel'nyye elementy i elementy gruppy zheleza. Moscow, 1965. Spektroskopiya kristallov (Spectroscopy of crystals); materialy simpoziuma. Moscow, Izd-vo Nauka, 1966, 126-130

TOPIC TAGS: magnetooptic effect, Zeeman effect, electron paramagnetic resonance, Hamiltonian

ABSTRACT: Splitting of the resonance line for CaF_2-Eu^{2+} was studied in both absorption and emission spectra. When the magnetic field was parallel to the fourth-order axis (H_0 parallel to [001]), the spectrogram plainly revealed asymmetry in intensity of the Zeeman component relative to the line not affected by the field. This asymmetry is clearly due to thermal freezing of the ions in strong magnetic fields. At low temperatures this occurs on Zeeman sublevels of the ground and excited states. From the experimental data on Zeeman splitting of λ_0 4130 Å with different crystal orientations in the magnetic field, it is established that the behavior of the excited level is defined by a spin Hamiltonian of the type

$$\mathcal{H} = g\beta HS + \beta HS$$

where g and β are parameters determined from experiment and are related to the Lande splitting factor. It was found that $|g| = 3.9 \pm 0.1$ and $|f| = 2.4 \pm 0.1$, and that the two are of opposite signs. Tentative theoretical considerations do not agree with this result, but the authors do not consider this too serious since the premises for the theory of interaction between mixed configurations and the crystalline field are highly speculative. This scheme permits examination of a number of possibilities in optical detection of electron paramagnetic resonance in CaF_2-Eu^{2+}. Detection of resonance may be due to selective reabsorption of the Zeeman component of emission. It may also be due to competition in intensities of resonance Zeeman transitions in absorption and emission. Orig. art. has: 4 figures and 1 equation.

SUB CODE: 20/ SUBM DATE: 25May66

ZAKHARCHENYA, B.P.; RYSKIN, A.Ya.

Magnetooptical phenomena in the absorption and emission spectra of CaF_2-Eu^{++} crystals. Opt. i spektr. 14 no.2:309-311 F '63. (MIRA 16:5)

(Magnetooptics) (Crystals—Spectra)

ACCESSION NR: AP4043009 S/0051/64/017/002/0219/0229

AUTHORS: Zakharchenya, B. P.; Makarov, V. P.; Ry*skin, A. Ya.

TITLE: Zeeman effect for f-d transitions in the spectra of rare earth fluoride crystals activated with Sm^{2+}

SOURCE: Optika i spektroskopiya, v. 17, no. 2, 1964, 219-229

TOPIC TAGS: Zeeman effect, absorption spectrum, emission spectrum, rare earth compound, fluoride, samarium, group theory

ABSTRACT: This is a continuation of earlier investigations (B. P. Zakharchenya and A. Ya. Ry*skin, Opt. i spektr. v. 13, 875, 1962 and v. 14, 309, 1963), and contains additional experimental facts and a more thorough theoretical discussion. The article reports on the results of experimental and theoretical investigation of the Zeeman effect of the most intense emission lines in crystals of the type MeF_2-Sm^{2+} (where Me = Ca, Sr, or Ba) and of the narrow absorp-

tion lines in CaF_2-Sm^{2+} and SrF_2-Sm^{2+}. The experiments were performed with single crystals MeF_2-Sm^{2+} containing a variable amount of Sm^{2+}, up to 0.5%, with the crystals cut in such a way as to permit their orientation in a magnetic field parallel to the four-fold, three-fold, or two-fold axis. The observation was made in polarized light in a direction perpendicular to the magnetic field, with the crystals cooled with liquid helium. The experimental data were analyzed on the basis of group-theoretical representations for the f-d transitions in the crystal. Two approximations were used in the calculation of the states of the f^5d configuration. In one the interaction of the f^5 electrons with the crystal field is assumed stronger than their interaction with the d-electron, and the other the interaction of the d-electron with the f^5 core is assumed stronger than the interaction of the f^5 electron with the field. The second approximation agrees better with the experimental data. "The authors are grateful to Ye. F. Gross and P. P. Feofilov

ACCESSION NR: AP4043009

for interest in the work, and also to A. G. Zhilich for many useful consultations on questions connected with the group-theoretical calculations." Orig. art. has: 4 figures, 7 formulas, and 2 tables.

ASSOCIATION: None

SUBMITTED: 29Jul63 ENCL: 00

SUB CODE: OP NR REF SOV: 007 OTHER: 009

ACCESSION NR: AP4020956 S/0051/64/016/003/0455/0460

AUTHOR: Zakharchenya,B.P.; Makarov,V.P.; Varfolomeyev,A.V.; Ry*skin,A.Ya.

TITLE: Zeeman splitting of the principal emission line in $CaF_2:Tm^{2+}$ crystals

SOURCE: Optika i spektroskopiya, v.16, no.3, 1964, 455-460

TOPIC TAGS: Zeeman effect, Zeeman splitting, thulium doped calcium fluoride, thulium activated calcium fluoride, calcium fluoride, thulium 2+, thulium ion, crystal structure, transition probability

ABSTRACT: Observation of the Zeeman effect in the spectra of crystals doped with transition-group ions can yield information on the symmetry of the states involved in the detected transitions, the multipole order of the transitions, and on the crystal structure and field. Zeeman splitting in the optical spectra of $CaF_2:RE^3$ (RE = rare earth) crystals was first observed and investigated by V.A.Arkhangel'skaya and P.P.Feofilov (Opt@.i spetm,4,602,1958) and has subsequently been studied by other authors. The present work is devoted to investigation - experimental and theoretical - of Zeeman splitting of the intense 1.116-μ line of the divalent thulium ion in CaF_2. The associated transition is identified. The infrared

spectra were observed by means of a DFS-12 double monochromator in which the standard diffraction grating was replaced by a special grating with 600 lines/mm and which concentrated 76% of the light in the 0.8 to 2.5-μ region. The linear dispersion was 10 Å/mm. The radiation detector was a liquid-nitrogen-cooled FEU-22 photomultiplier. The field was produced by a magnet with 30-mm-diameter Permendur pole pieces and a gap of 20 mm; the highest field strength was 40-kOe. The $CaF_2:Tm^{2+}$ single crystals were prepared by gamma-irradiation of $CaF_2:Tm^{3+}$ crystals. The specimens were cooled to 77 and 4.2°K. The splitting in the 40 kOe field varies in the range from under 3 to over 9 cm^{-1}, depending on the orientation of the magnetic field, the direction of observation, and the orientation of the electric vector of the light. The components of the doublet are not always equal. The results are analyzed from the theoretical standpoint. An attempt made to observe the splitting of the second intense line at 1.189 μ proved vain for reasons that are still obscure. "The authors acknowledge their gratitude to Ye.F.Gross for his interest in the work and to P.P.Feofilov for useful suggestions." Orig.art.has: 25 formulas and 3 figures.

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R001446510006-4

L 63960-65 EWT(l)/EWT(m)/EPF(c)/T/EWP(t)/EEC(b)-2/EWP(b) IJP(c)
JD/JW/GG

ACCESSION NR: AP5016172 UR/0051/65/018/006/0999/1010
539.184.28:548.0

AUTHOR: Zakharchenya, B. P.; Rusanov, I. B.; Ryskin, A. Ya.

TITLE: The Zeeman effect of the resonance line (4130 Å) in the spectrum of a CaF_2-Eu^{2+} crystal

SOURCE: Optika i spektroskopiya, v. 18, no. 6, 1965, 999-1010

TOPIC TAGS: Zeeman effect, optical resonance, spectrum line, paramagnetic resonance, calcium fluoride laser, calcium fluoride

ABSTRACT: Variation in the intensities of the Zeeman components of the 4130 Å "resonance" line in the spectrum of a CaF_2-Eu^{2+} crystal is experimentally studied at 4.2 and 1.7K. A Zeeman transition diagram is constructed on the basis of these experiments and group-theoretical analysis is conducted for the complex case of the Zeeman effect in a cubic crystal when the lower $^8S_{7/2}$ level is split into eight sublevels and the upper excited $^4\Gamma_8^+$ level is split into four sublevels. The behavior of the $^4\Gamma_8^+$ level in a magnetic field may be described by a spin Hamiltonian of the type $\mathcal{H} = g\beta HS + \gamma HS^3$.

Card 1/2

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R001446510006-4

L 63960-65

ACCESSION NR: AP5016172

It was found that Zeeman splitting at 4130 Å results in circularly polarized components. Study of the Zeeman effect for this line shows that the spin-lattice relaxation time is very short for Zeeman sublevels of the excited state (less than $7 \cdot 10^{-7}$ seconds). The use of CaF_2-Eu^{2+} for optical detection of paramagnetic resonance in the excited state is discussed. "In conclusion, the authors consider it their duty to thank Ye. F. Gross and P. P. Feofilov for interest in the work and also V. P. Makarov and G. Bir for consultation." Orig. art. has: 4 figures, 4 formulas, and 4 tables. [14]

ASSOCIATION: none

SUBMITTED: 07May64 ENCL: 00 SUB CODE: SS, OP

NO REF SOV: 007 OTHER: 009 ATD PRESS: 4071

ZAKHARCHENYA[illegible], B.P.; [illegible], V. ; [illegible], A. Ya.

Zeeman effect of ? - d - transitions in the spectra of alkaline-earth fluoride crystals activated by Sm^{++}. Opt. i spektr. 17 no.2:219-229 Ag'64 (MIRA 17:8)

RYUKHIN, N.V., kand.tekhn.nauk; RYSOVA, A.P., starshiy nauchnyy sotrudnik

New types of felts for the papermaking machines. Bum.prom. 37 no. 8:19-21 Ag '62. (MIRA 17:2)

ZAKHARCHENYA, B. P.; MYSKIN, A. Ya.

Zeeman effect in the absorption spectrum and luminescence of CaF_2 - Sm^{++} and SrF_2 - Sm^{++} crystals. Opt. i spektr. 13 no.6: 875-877 D '62. (MIRA 16:1)

(Magnetooptics)
(Calcium fluoride crystals--Spectra)
(Strontium fluoride crystals--Spectra)

30799
S/003/011/045/056

24.3600 (1035, 1144, 1385, 1147)

AUTHORS: Zakharchenya, B. P., Sibileva, A. I., Kanskaya, L. M., and Ryskin, A. Ya.

TITLE: Zeeman effect on B_1 and B_2 lines of the absorption spectrum of ruby in strong pulsed magnetic fields

PERIODICAL: Fizika tverdogo tela, v. 3, no. 11, 1961, 3531-3533

TEXT: Zeeman splitting of B_1 and B_2 absorption lines of ruby was achieved by applying pulsed magnetic fields of up to 130,000 oersteds. The C_3 principal axis of the ruby crystals was perpendicular to the direction of observation. It could be orientated perpendicular to, or in the direction of, the magnetic field H. In the diagram showing the results the distances between the components of the quartets are unequal, which is appropriate for the splitting of the principal level ($\sigma = 0.38\ cm^{-1}$) in the absence of magnetic field. The fact of quartet splitting is in good agreement with the paramagnetic resonance data and theory of S. Sugano

and Y. Tanabe (J. Phys. Soc. Japan, 13, 880, 1958). The asymmetrical intensity of the edge components of the line splitting does not agree with theory. The spectroscopic splitting factor of the excited level differs from the theoretical value by -0.6 for the B_2 line and by about +0.30 for the B_1 line. This indicates considerable theoretical error. A later paper will discuss the experimental error for this kind of investigation. Corresponding Member AS USSR Ye. F. Gross is thanked for his interest. There are 1 figure and 3 references: 1 Soviet and 2 non-Soviet. The two references to English-language publications read as follows: S. Sugano, Y. Tanabe, J. Phys. Soc. Japan, 13, 880, 1958; S. Sugano, J. Tsujikawa. J. Phys. Soc. Japan, 13, 899, 1958.

ASSOCIATION: Fiziko-tekhnicheskiy institut im. A. F. Ioffe AN SSSR (Physicotechnical Institute imeni A. F. Ioffe AS USSR, Leningrad)

SUBMITTED: July 10, 1960

"APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R001446510006-4"

RYSKIN, B. Z.

"Laying Cable Lines in Cities With Extensive Underground Installations," "Operation of Cable Networks" (Eksploatatsiya kabeley i kabel'nykh setey), Gosenergoizdat, 1949, 384 pp.

ARMAND, N.A.; VVEDENSKIY, B.A.; GUSYATINSKIY, I.A.; IGOSHEV, I.P.; KAZAKOV, L.Ya.; KALININ, A.I.; KOLOSOV, M.A.; LEVSHIN, I.P.; LOMAKIN, A.N.; NAZAROVA, L.G.; NEMIROVSKIY, A.S.; PROSIN, A.V.; RYSKIN, E.Ya.; SOKOLOV, A.V.; TARASOV, V.A.; TRASHKOV, P.S.; TIKHOMIROV, Yu.A.; TROITSKIY, V.N.; FEDOROVA, L.V.; CHERNYY, F.B.; SHABEL'NIKOV, A.V.; SHIREY, R.A.; SHIFRIN, Ya.S.; SHUR, A.A.; YAKOVLEV, O.I.; ARENBERG, N.Ya., red.

[Long-distance tropospheric propagation of ultrashort radio waves] Dal'nee troposfernoe rasprostranenie ul'trakorotkikh radiovoln. Moskva, Sovetskoe radio, 1965. 414 p. (MIRA 18:9)

GUSYATINSKIY, I.A.; RYSKIN, E.Ya.

Theoretical and experimental study of the power of transient interference during multibeam reception. Elektrosviaz' 16 no.12:3-13 D '62. (MIRA 16:1)

(Radio relay lines)
(Microwave communication systems)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R001446510006-4

L 32835-65 FSS-2/EWT(d)/EEC(t)/EEC-4 Pn-4/Pp-4/Pac-4
ACCESSION NR: AP5005579 S/0106/65/000/002/0024/0033

AUTHOR: Gusyatinskiy, I. A.; Ryskin, E. Ya.

TITLE: Theoretical and experimental investigation of the fluctuations of amplitude and phase of the modulating signal in an FM multipath channel

SOURCE: Elektrosvyaz', no. 2, 1965, 24-33

TOPIC TAGS: multipath communication, multipath transmission, FM radio telegraphy

ABSTRACT: A theoretical investigation is presented of the amplitude and phase fluctuations of the first harmonic at the output of a frequency detector, with a single-tone sinusoidal modulation and a signal transmission over a multipath channel having random parameters. The amplitude fluctuation grows with the higher modulating frequency, i. e., the net attenuation decreases. The integral distribution of the group transmission time and of the first-harmonic amplitude is

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R001446510006-4

L 32835-65

ACCESSION NR: AP5005579

found for a double reception with a linear signal addition and for a quadruple reception with an automatic selection of the best of four signals. Some theoretical formulas were experimentally verified on a 300-km-long route, with a 1°-wide directional pattern; a 275-kc sinusoidal signal was used to frequency-modulate the transmitter with a maximum deviation of 140 kc. Some experimental data is presented. Orig. art. has: 5 figures and 55 formulas.

ASSOCIATION: none

SUBMITTED: 09Jun64 ENCL: 00 SUB CODE: EC

NO REF SOV: 005 OTHER: 000

Card 2/2

AM5027749 Monograph UR/ 20

Armand, N. A.; Vvedenskiy, B. A.; Gusyatinskiy, I. A.; Igoshev, I.P.; Kazakov, L. YA.; Kalinin, A. I.; Nazarova, L. G.; Nemirovskiy, A. S.; Prosin, A.V.; Ryskin, E. YA.; Sokolov, A. V.; Tarasov, V.A.; Tashkov, P. S.; Tikhomirov, YU. A.; Troitskiy, V. N. Fedorova, L. V.; Chernyy, F. B.; Shabel'nikov, A. V.; Shirey, R. A.; Shiffrin, YA. S.; Shur, A. A.;;YAkovlev, O. I.; Kolosov, M. A.; Lovshin, I. P.; Lomakin, A. M.

Upper tropospheric propagation of ultrashort radio waves (Dal'neye troposfernoye rasprostraneniye ul'trakorotkikh radiovoln) Moscow, Izd-vo "Sovetskoye radio", 1965. 414 p. illus., biblio. 4000 copies printed.

TOPIC TAGS: radio wave propagation, tropospheric radio wave, radio communication, space communication, tropospheric scatter communication, signal processing, signal distortion, field theory

PURPOSE AND COVERAGE: This monograph is intended for specialists working in the field of radiowave propagation, designers of long-distance radio communication systems, and teachers and students of the advanced courses in schools of higher technical education. The monograph contains, for the most part, heretofore unpublished results of Soviet experimental and theoretical investigations in the field of long-distance tropospheric ultrashortwave propagation.

Card 1/10 UDC: 621.371.24

ACC NR AM5027749

Problems of investigating the troposphere by means of refractometers, the mean level of signals, meteorological conditions and topography, fluctuation of arrival angles and distortions of antenna directivity patterns, losses in antenna gain, and quick and slow fadings of signal levels are discussed. The statistical characteristics of the signals at diversity reception in time, space, frequency and angle as well as the distortion of signals in the communication systems are also investigated. The long-distance propagation theory is analyzed, and the engineering method of calculating field intensity at long-distance tropospheric propagation is given. At present, there is no theory of Long-Distance Tropospheric Propagation which can be applied effectively enough in practice. Thus, in the investigation of that propagation, considerable attention has to be paid to experiments. The special characteristics of geographical conditions of the territory involved should be taken into consideration during the analysis of experimental data and in their practical application because the conditions of propagation in arctic and tropical climates differ from those existing over seas and continents. A considerable part of the monograph deals with the investigations of long-distance tropospheric propagation carried out over dry land routes, 800 km long, in the central part of the USSR under the general supervision of B. A. Vvedenskiy and A. G. Arenberg (up to 1957). V. I. Siforov investigated problems con-

Card 2/10

nected with distortions and fluctuations of signals. References follow each chapter.

TABLE OF CONTENTS:

ACC NR AM6027710

Card 5/10

RYSKIN, E.Ya.

Threshold level of an F.M. receiver. Elektrosviaz' 18 no.6:1-7 Je '64. (MIRA 18:1)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R001446510006-4"

ACCESSION NR: AP4040998 S/0106/64/000/006/0001/0007

AUTHOR: Ry*skin, E. Ya.

TITLE: Threshold level of an FM receiver

SOURCE: Elektrosvyaz', no. 6, 1964, 1-7

TOPIC TAGS: telephony, FM receiver, signal noise ratio

ABSTRACT: The effect of the input signal-to-noise ratio on the output signal-to-noise ratio in a receiver whose carrier is frequency-modulated by a multichannel telephone signal is analyzed. The method of probabilistic weights suggested by V. A. Smirnov (Radiotekhnika, 1958, no. 9) is used. It is shown that the threshold area in the lower telephone channel is displaced into the strong-signal range as compared to the no-modulation case. This is explained by the fact that when the signal instantaneous frequency varies, the output signal amplitude varies according to the slope of the frequency response curve of the IF amplifier which

ACCESSION NR: AP4040998

affects the input signal-to-noise ratio. An experimental verification included the measurement of noise in a two-circuit resonance system (a) without modulation and (b) with modulation of the signal by a normal process. "In conclusion, I take this opportunity to thank S. V. Borodich and I. A. Gusyatinskiy for their help in the preparation of this article." Orig. art. has: 4 figures and 20 formulas.

ASSOCIATION: none

SUBMITTED: 08Jan64 ENCL: 00

SUB CODE: EC NO REF SOV: 004 OTHER: 000

GUSYATINSKIY, I.A.; RYSKIN, E.Ya.

Theoretical and experimental study of amplitude and phase fluctuations of the modulating signal in a multibeam channel with frequency modulation. Elektrosviaz' 19 no.2:24-33 F '65.
(MIRA 18:3)

RYSKIN, E.Ya.

Differentiation of random processes. Elektrosviaz' 16 no.6:72-72 Je '62. (MIRA 15:6)

(Information theory)

RYSKIN, G.Ya

Category : USSR/Atomic and Molecular Physics - Statistical Physics. D-3
Thermodynamics.

Abs Jour : Ref Zhur - Fizika, No 3, 1957, No 6256

Author : Konstantinov, B.I., Ryskin, G.Ya.
Inst : Leningrad Physical-Technical Institute, Acedemy of Sciences, USSR.
Title : Flotation Method of Measuring the Coefficient of Volume Expansion of Crystals.

Orig Pub : Dokl. AN SSSR, 1956, 108, No 3, 455-457

Abstract : By flotation method is meant a method of comparing the density ρ of a small crystal with the density of a liquid by observing the sinking or floating of the crystal in the liquid. The authors consider the possibility of employing this method to determine the coefficient of thermal expension α of a given crystal by comparing it with the value of α of another crystal, comprising either a quartz or a glass float. The "flotation mixture" (combination of crystal or a suspension of crystals and liquid) should be homogeneous and chemically stable, and the crystal and float should be

RYSKIN, G.Ya.

Measuring diffusion coefficients by means of radioactivation analysis and isotope dilution. Fiz. tver. tela 1 no.6:952-954 Je '59. (MIRA 12:10)

1.Leningradskiy fiziko-tekhicheskiy institut AN SSSR.
(Diffusion)

KONSTANTINOV, B.P.; BAYKOV, Yu.M.; RYSKIN, G.Ya.

Flotation method for measuring compression coefficients of solids and liquids. Fiz. tver. tela 1 no.6:963-969 Je '59.
(MIRA 12:10)

1.Leningradskiy fiziko-tekhnicheskiy institut AN SSSR.
(Compressibility)

KONSTANTINOV, B.P.; RYSKIN, G.Ya.; RYLOV, V.S.

Rate of element exchange between lithium amalgam and KCl aqueous solution. Zhur.fiz.khim. 36 no.8:1639-1645 Ag '62. (MIRA 15:8)

1. Leningradskiy fiziko-tekhnicheskiy institut, AN SSSR.
(Amalgams) (Potassium chloride) (Electrochemistry)

RYSKIN, G.Ya.; RYLOV, V.S.; TRUNOV, V.A.

Rate of isotopic exchange of potassium between potassium amalgam and aqueous solution of KCl. Zhur.fiz.khim. 36 no.10:2126-2131 O '62. (MIRA 17:4)

1. Leningradskiy fiziko-tekhnicheskiy institut imeni A.F.Ioffe.

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R001440510006-4

L 43900-65 EPF(n)-2/EPA(s)-2/EWA(c)/EWT(m)/EWP(b)/T/EWP(t) Pt-7/Pu-4/Peb
DIAAP/IJP(c) JD/JG
ACCESSION NR: AP5006868 S/0181/65/007/003/0695/0696

AUTHOR: Naumov, A. N.; Ryskin, G. Ya. 45 44 B

TITLE: Isotopic effect of diffusion of lithium in sodium

SOURCE: Fizika tverdogo tela, v. 7, no. 3, 1965, 695-696

TOPIC TAGS: isotopic effect, diffusion, lithium, sodium, diffusion coefficient ratio

ABSTRACT: Results are presented of the measurements of the isotopic effective diffusion of lithium in sodium at 80C. Polycrystalline samples were used in the form of cylinders 1.8 cm in diameter and 5 cm long. The initial lithium comprised 7.9% Li^6 and 92.1% Li^7. The procedure of the experiments was described earlier (FTT v. 6, 2517, 1964). The ratio of the diffusion coefficients of the isotopes was found to be 1.073 ± 0.006, in good agreement with the theoretical value 1.08 (square root of the ratio of the isotope masses). The method of separating the diffused lithium from the sodium is described. Orig. art. has: 2 formulas and 1 table.

Card 1/2

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R001440510006-4

L 43900-65

ACCESSION NR: AP5006868

ASSOCIATION: Fiziko-tekhnicheskiy institut im. A. F. Ioffe AN SSSR, Leningrad (Physicotechnical Institute, AN SSSR)

SUBMITTED: 18Jun64 ENCL: 00 SUB CODE: NP, SS

NR REF SOV: 005 OTHER: 001

Card 2/2 mb

L 39575-66 EWT(1)/EWT(m)/T DJ/GD

ACC NR: AP6000432 SOURCE CODE: UR/0292/65/000/010/0014/0016

AUTHOR: Plyushch, B. M. (Doctor of technical sciences; Professor); Ryskin, L. L. (Engineer)

ORG: none

TITLE: Operation of a sliding contact in d-c motors submerged in a liquid dielectric

SOURCE: Elektrotekhnika, no. 10, 1965, 14-16

TOPIC TAGS: dc motor, submersible dc motor

ABSTRACT: An experimental investigation of the operation of d-c motor brushes submerged in transformer oil is reported. A PN-68, 220-v, 33-amp, 6.2-kw, 1460-rpm d-c motor with a 125-mm diameter commutator was equipped with a device for adjusting the pressure exerted on 10 x 25 x 32-mm brushes; the entire motor was submerged into transformer oil whose temperature could be controlled. Hard carbon (T-2) brushes exhibited the best sparkless performance at speeds up to 2200 rpm and loads up to 1.25 nominal. An auxiliary textolite "guard" brush with its separate spring was found to be of some merit, particularly at lower speeds and temperatures. A pressure of 5—6 kg/cm^2 is recommended for speeds of 10—12 m/sec and oil temperatures of 40—50C. Three other d-c motors (6.2, 6.2, and 0.8 kw) operated successfully in the test oil tank. Orig. art. has: 5 figures.

SUB CODE: 09 / SUBM DATE: none / ORIG REF: 003

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R001446510006-4"

PIYUSHCH, B.M., doktor tekhn.nauk, prof.; RYSKIN, L.L., inzh.

Performance of the slide contacts of d.c. motors in a liquid dielectric media. Elektrotekhnika 36 no.10:14-16 O '65. (MIRA 18:10)

TURGEL', Ye.O.; RYSKIN, M.I.; SHMULYAKOVSKIY, Ya.E.; RUDOY, S.A.

Analytical control of the process of disproportionation of rosin. Gidroliz. i lesokhim.prom. 16 no.1:19-21 '63. (MIRA 16:2)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut neftekhimicheskikh protsessov.

(Oleoresins)

GOLOVIN, G.F., kandidat tekhnicheskikh nauk; RYSKIN, S.Ye.; SHEKALOV, A.A., kandidat tekhnicheskikh nauk.

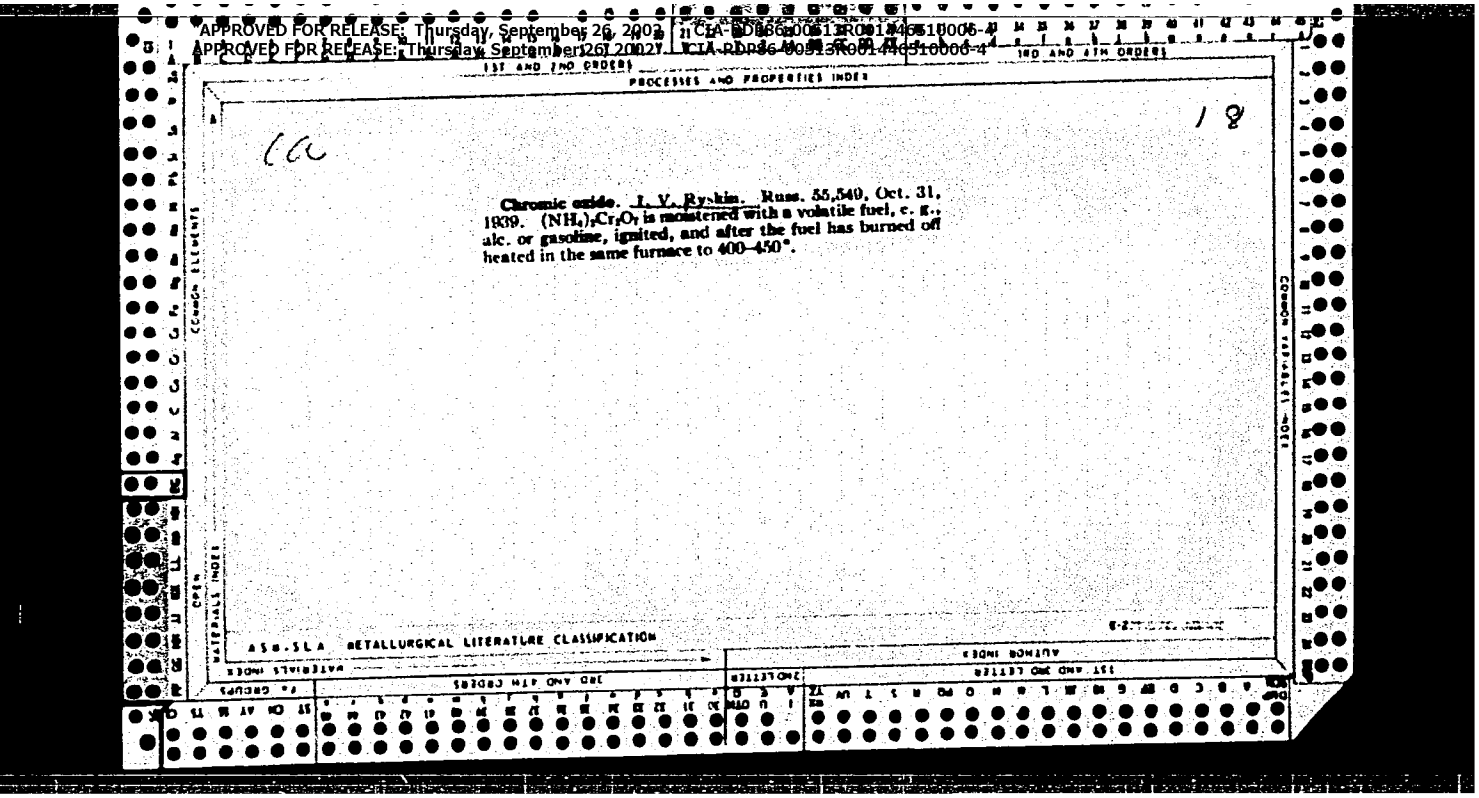
Centrifugal lining of bimetallic bushings with lead bronze. Avt. i trakt. prom. no.5:44-46 My '57. (MIRA 10:6)

1. Nauchno-issledovatel'skiy institut tokov vysokoy chastoty.
(Bearings (Machinery)) (Lead bronze)

RYSKIN, A.I.

A wide dispersion, high resolution spectrograph. Izv. AN SSSR. Ser. fiz. 19 no.1:81-82 Ja-F '55. (MLRA 8:9)
(Spectrum analysis) (Spectrometer)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R001446510006-4



PROCESSES AND PROPERTIES INDEX

1ST AND 2ND ORDERS

3RD AND 4TH ORDERS

18

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Chromic oxide. I. V. Ryshin. Russ. 55,549, Oct. 31, 1939. $(NH_4)_2Cr_2O_7$ is moistened with a volatile fuel, e. g., alc. or gasoline, ignited, and after the fuel has burned off heated in the same furnace to 400–450°.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

MATERIALS INDEX

1ST AND 2ND LETTER

AUTHOR INDEX

RYSKIN, G.Ya.; RYLOV, V.S.

Separation of potassium isotopes by electrolysis on a mercury cathode and by crystallization of potassium chloride. Zhur. fiz. khim. 36 no.9:1854-1859 S '62. (MIRA 17:6)

1. Leningradskiy fiziko-tekhnicheskiy institut AN SSSR.

NAUMOV, A.N.; RYSKIN, G.Ya.

Self-diffusion in solid lithium. Zhur.tekh.fiz. 29 no.2:189-191 F '59. (MIRA 12:4)

1. Leningradskiy fiziko-tekhnicheskiy institut.
(Lithium) (Diffusion)

SOV/57-58-8-22/37

AUTHORS: Konstantinov, B. P., Yefremova, Z. N., Ryskin, G. Ya.

TITLE: Expansion Coefficient Measurements of NaCl, LiF, KCl, and KBr by the Flotation Method (Izmereniye koeffitsiyentov rasshireniya NaCl, LiF, KCl, KBr flotatsionnym metodom)

PERIODICAL: Zhurnal tekhnicheskoy fiziki, 1958, Nr 8, pp 1740 - 1747 (USSR)

ABSTRACT: In this paper a detailed description is presented of the technique of measuring the expansion coefficients of salt crystals according to the flotation method. The application of floaters for the determination of the temperature coefficient of the density β of a fluid is suggested. This method is based upon the measurement of the temperature difference of the flotation of two floaters kept in the fluid to be investigated and in a control fluid, the β of which is known. The room temperature expansion coefficients γ_k of NaCl, KCl, KBr, LiF were measured. The reproducibility of the measurements is as high as 0,5 - 1%. This is in accordance with the estimation of the accuracy of this method presented by Konstantinov and Ryskin in reference 1. The measured values

Card 1/2

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R001446510006-4"

Expansion Coefficient Measurements of NaCl, LiF, KCl, and KBr by the Flotation Method SOV/57-58-8-22/37

of γ_k agree satisfactorily with most recent interferometric and X-ray analysis measurements of the expansion coefficients of the respective salts. There are 4 tables and 11 references, 2 of which are Soviet.

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

SUBMITTED: October 11, 1957

KONSTANTINOV, B.P.; YEFREMOVA, Z.N.; RYSKIN, G.Ya.

Measurement of NaCl, LiF and KBr expansion coefficients by the flotation method. Zhur. tekh. fiz. 28 no. 8:1740-1747 Ag '58. (MIRA 11:10)

1. Leningradskiy fiziko-tekhnicheskiy institut AN SSSR.
(Alkali halide crystals)
(Flotation)

RYSKIN, APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R001446510006-4

Flotation method of measurement of the expansion coefficients of crystals. B. P. Konstantinov and G. Ya. Ryskin (Phys.-Tech. Inst., Leningrad). *Doklady Akad. Nauk S.S.S.R.* 103, 455-7(1956).—The flotation method used for the detn. of isotope compn. and of at. wt. gave more accurate results than did other methods, and the possibility was explored of using this method to det. the expansion coeff. of crystals, based on an accurate detn. of the difference between the d. of the crystal and of a float, of which the expansion coeff. is known. Quartz floats were selected as standards. A formula is derived for the d. comparison of 2 mixts. that are stable over a long time period, and that therefore are uniform, and in which neither the crystal nor the float are sol. The method was used for the detn. of the expansion coeffs. of NaCl, KCl, KBr, and LiF, but the data obtained are not reproduced.

W. M. Sternberg

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R001446510006-4

RYSKIN, G. Ya.

M. A. YOUTZ

2067

Energy of activation and the temperature coefficient of diffusion in polymers. G. Ya. Ryskin. *Zhur. Tekh. Fiz.* 25, 458-65(1955).—The rate of diffusion of gases and vapors into org. polymers is given by $D = D_0 e^{-E/RT}$. Values of D and E as detd. by the sorption method are given for poly(vinyl acetate) at 303°K. for water, various alcs., alkyl halides, benzene, and pyridine; poly(vinyl alc.) at 400°K.; for polystyrene at 301°K. for alcs. and alkyl halides; for poly(ethyl methacrylate) at 313°K.; for poly-(methyl acrylate) at 280°K.; for poly(methyl methacrylate) at 303°K.; for poly(butyl methacrylate) at 281°K. The experimentally detd. or true values of E are smaller than the theoretical values. Franz H. Rathmann

BM

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R001446510006-4"

KONSTANTINOV, B.P.; RYSKIN, G.Ya.

Flotation method for measuring volume expansion coefficients of crystals. Dokl.AN SSSR 108 no.3:455-457 My '56. (MLRA 9:8)

1. Chlen-korrespondent AN SSSR (for Konstantinov); 2. Leningradskiy fiziko-tekhnicheskiy institut Akademii nauk SSSR.
(Crystals--Measurement) (Expansion of solids)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R001446510006-4

RYSKIN, G. Ya.

USSR

9750* Activation Energy and Temperature Dependence of Diffusion in Polymers. Energiia aktivatsii i temperaturnaia zavisimost' diffuzii v polimerakh. (Russian.) G. Ya. Ryskin. *Zhurnal Tekhnicheskoi Fiziki*, v. 25, no. 3, Mar. 1955, p. 458-465.

Diffusion parameters in vinyl polymers. Graphs, tables. 7 ref.

RYSKIN, O. Ya.

USSR

Diffusion in polymers. G. N. Zhurkov and O. Ya. Ryskin. *Zhur. Tekh. Fiz.* 24, 797-810(1954).—Diffusion of water and of various org. vapors in polymers of methyl acrylate (I), methyl methacrylate (II), ethyl methacrylate (III), butyl methacrylate (IV), styrene (V), and vinyl acetate (VI) was measured by the sorption method at high temps. This method allows detn. of the coeff. of diffusion having an order of magnitude as low as 10^{-9} sq. cm./sec. Diffusion coeff. (D) was calcd. from the derived equation: $D = -a^2 \Delta \ln (N_\infty - N)/\pi^2 \Delta t$, where a = thickness of the polymer film, N_∞ = wt. of the swelled film at equil., N = wt. of the film after time t. Applicability of this equation is expressed as $\exp(8\pi^2 Dt/a^2) >> 1$. Measurements of D revealed that an increase in the molar vol. sharply decreases the diffusion rate. E.g., a 5-fold increase in molar vol. (H_2O vs. CCl_4) decreases the rate of diffusion in VI 8,000 times. No correlation was found between the rate of diffusion and the mol. wt., heat of evapn., and b.p. of the diluent or the energy of activation. In the case of every polymer studied a linear relation between the temp. coeff. of diffusion (E) and molar vol. (V) of the diluent could be expressed above the glass temp. (T_g) by the equation $E = E_0(1 + \alpha V)$. Here E_0 and α are consts. characteristic for each polymer and independent of the diluent. The temp. dependence of D above and below the 2nd-order transition obeys the empirical equation $D = D_0 e^{-E/RT}$. In the interval of temps. T_1–T_2, chosen in such a manner that $T_2 > T_g > T_1$, the relation of $\ln D$ vs. $1/T$ gives two straight lines that cross at T_g. Consts. D_0 and E_0 change at the transition point T_g, so that for $T < T_g$ they are in all cases smaller than for $T > T_g$. The temp. of the 2nd-order transition for I was 8°; II, 82°; III, 42°; IV, 10°; V, 82°; and VI, 30°.

A. P. Kotloby

RYSKIN, G.Ya.

Activation energy and temperature dependence of diffusion in polymers. (MLRA 8:5)
Zhur. tekh. fiz. 25 no.3:458-465 Mr '55.
(Polymers and polymerization) (Diffusion)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R001446510006-4"

FD-563

RYSKIN, G. Ya.

USSR/Physics - Polymer diffusion

Card 1/1 : Pub. 153 - 3/28

Author : Zhurkov, S.N., and Ryskin, G. Ya.

Title : Investigation of diffusion in polymers

Periodical : Zhur. tekh. fiz. 24, 797-810, May 1954

Abstract : Presents a mathematical theory of the temperature dependence of the diffusion velocity in polymers of water vapor and many organic liquid vapors over a wide temperature range. Briefly describes the experimental set-up.

Institution : --

Submitted : December 2, 1953

RYSKIN, M.

On the asbestos market. Vnesh. torg. 27 no.8:18-22 '57.(MLRA 10:9)
(Asbestos)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R001446510006-4"

КАТАЛИТИЧЕСКАЯ ИЗОМЕРИЗАЦИЯ ПАРАФИНОВЫХ УГЛЕВОДОРОДОВ

Г. Н. Маслянский, [illegible], Н. Р. Бурсиан,
[illegible]

VIII Mendeleyev Congress for General and Applied Chemistry in
Section of Chemistry and Chemical Technology of Fuels,
publ. by Acad. Sci. USSR, Moscow 1959

abstracts of reports scheduled to be presented at above mentioned congress,
Moscow, 15 March 1959.

S/138/61/000/004/002/006
A051/A129

AUTHORS: Nemtsov, M.S., Ryskin, M.I.

TITLE: Disproportionation of colophony in stationary catalysts for producing emulsifiers used in the production of butadiene-styrene rubbers

PERIODICAL: Kauchuk i rezina, no. 4, 1961, 7-15

TEXT: This is a continuation of the work published in Ref. 1, M.S. Nemtsov, F.S. Shenderovich, Kauchuk i rezina, no. 2, 1961, 4. In 1959 the possibilities were studied for creating a continuous process of disproportionation of colophony with a stationary catalyst, almost excluding a catalyst suspension in the produced colophony. The major obstacle for the commercial use of this process was the gradual poisoning of the catalyst. The reactors of the model set-up (capacity 1 and 10 l) were hollow tubes. In testing the nickel catalyst the first laboratory tests showed the possibility of achieving a continuous process over a period of 500 hours at 225-230°C. The first experiments on the effect [illegible] in the catalyst showed that the duration of the

regenerating catalyst action depends largely on the quantity of the palladium. When using a catalyst made of palladium applied on granulated large-porous activated БАУ-3 (BAU) carbon (2.3%) favorable process indexes were maintained. It was concluded that the duration of the catalyst activity increases when the initial colophony is purified of any catalytic "poisons". The effectiveness of the action of the palladium catalyst depends on the size of its grains. Recuperated activated АР-3 (AR) carbon was used as the carrier instead of BAU-3. The relationship between the depth of transformation of abietic acid to the rate of the colophony supply and temperature was established in order to determine the kinetic laws of the disproportionation process (Fig. 6). The thermal effect of the process was also investigated. Experimental data showed that in all cases the temperature inside the catalyst was higher than in the aluminum block of the reactor, i.e. during the entire time of the catalyst action within the temperature range from 200 to 250°C the process remained exothermic. In selecting a technology and apparatus for the disproportionation process of colophony, the following factors and characteristics must be taken into account: 1) the catalyst gradually loses its activity and must be periodically replaced by a fresh one; 2)

in order to maintain the necessary depth of transformation and the given output of the apparatus of continuous action of the process, the temperature conditions of the process should change with the time; 3) the positive thermal effect of the reaction calls for a regenerating heat-remover. The principle diagram of the set-up is given in Fig. 9. This scheme is thought to be typical. The quality of the disproportionated colophony as an emulsifier for the production of butadiene-styrene rubber was tested. It was found that the suspended dust-like particles of the catalyst, such as the nickel or palladium particles are present only in the first samples of colophony, rinsing the surface of the freshly-suspended catalyst grains. After 0.5-1.0 hrs of the catalyst action, the yielded product is almost completely devoid of any suspended particles. Various samples obtained during the process of "cold" copolymerization of butadiene and styrene according to the trilon-rongalite composition were tested according to the ampoule method, in order to establish the effect on the colophony emulsifiers' "activity" of the conditions of the process of colophony disproportionation. It was shown that the colophony obtained with a nickel catalyst, both directly as well as after fractionating, is much inferior in "activity" to the American preparation

"Dresinate - 214". The colophony disproportionated with the palladium catalyst after fractionation has about the same rate of polymerization as "Dresinate-214". Thus, the process of disproportionation with stationary palladium catalyst yields the production of effective colophony emulsifiers. There are 9 graphs, 1 diagram and 3 references: 1 Soviet-bloc and 2 non-Soviet-bloc.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut neftekhimicheskikh protsessov (All-Union Scientific-Research Institute of the Oil-Chemical Processes)

NEMTSOV, M.S.; RYSKIN, M.I.

Disproportionation of rosin on fixed bed catalysts for the purpose of obtaining emulsifying agents used in the manufacture of butadiene-styrene rubbers. Kauch. i rez. 20 no. 4:7-15 Ap '61. (MIRA 14:5)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut neftekhimicheskikh protsessov.

(Rosin) (Emulsifying agents) (Rubber, Synthetic)

S/081/61/000/011/033/040
B110/B201

AUTHORS: Levin, A. I., Ryskin, M. I.

TITLE: Production of standard fuels and individual hydrocarbons

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 11, 1961, 485, abstract 11M214 (11M214) (Tr. Vses. n.-i. in-t neftekhim. protsessov, 1960, vyp. 1, 129-146)

TEXT: Synthol, a mixture of hydrocarbons of the paraffin series, served as starting material for the production of n-heptane. It consists mainly of C_5-C_9 as well as of the accompanying unsaturated hydrocarbons (up to 40-43% in the low-boiling and up to 20% in the high-boiling fractions) with a possible content of the heptane-heptene fraction of about 20%, inclusive of 13.6% n-heptane. Synthol was subjected to gradual fractionation on a laboratory column with 25 plates and the reflux number 20. Most of the heptene-heptane fraction is contained in the fraction boiling between 96 and 98°C. Unsaturated hydrocarbons were purified by means of sulfuric acid or by hydrogenation of this fraction at 160°C, at a volume rate 0.15 per volume of catalyst (nickel on kieselguhr), and at an H_2

feeding rate of 8 l/hr. Under equal fractionation conditions the yield of standard heptane obtained by hydrogenation is 23-35% higher than on purification by sulfuric acid. The n-heptane samples so obtained display the following characteristics: d_4^{20} = 0.6831 - 0.6848; n_D^{20} = 1.38777 - - 1.38825, aniline point 70.0-70.1, boiling point 98.0-98.5, octane number 0. The purity of the product obtained was checked by taking a Raman spectrum. The yield of standard heptane is 35.6% of the capacity per working cycle. Standard and commercial isooctane (fuel S) were obtained from alkyl gasoline of Gur'yevskiy NPZ (Gur'yevsk NPZ) in two stages: a) separation of the 80-100°C fraction from the alkylate on the rectification units of the first stage, and b) separation of standard fuels from the 80-100°C fraction on the precision rectification units of the second stage. The 98.2-99.1°C fraction was taken as commercial and the 99.1-99.4°C fraction as standard isooctane. The total yield of standard fuels was 16.7% of the initial gasoline. Standard isooctane had d_4^{20} = 0.6919; n_D^{20} = 1.3917, boiling point = 99.2°C, octane number 100. Analogously, the following substances were separated from the corresponding

alkyl-gasoline fractions: isopentane, 2,3-dimethyl butane, and other hydrocarbons. A project of provisional industrial production conditions for standard n-heptane was suggested. The production of standard hydrocarbons was started on an experimental plant. Technical data concerning the planning of an industrial plant for standard fuels are given.
[Abstracter's note: Complete translation.]

RUDKOVSKIY, D.M.; RYSKIN, M.I.; TSELLINSKAYA, T.F.

Selection of carriers for cobalt in the process of oxo synthesis.
Trudy VNIINeftekhim no.2:59-66 '60. (MIRA 14:2)
(Oxo process) (Cobalt)

GORBATIKOV, Viktor Andreyevich; RYSKIN, Moisey Nisonovich; VRONSKIY, L.N., ved. red.

[Planning the overall automation of oil-field operations] Proektirovanie kompleksnoi avtomatizatsii neftianykh promyslov. Moskva, Nedra, 1965. 101 p. (MIRA 18:7)

RYSKIN, M.S., inzhener.

Warehouses for packed cargoes in river harbors. Mech. transp. 16 no.6:25-26 Je '57. (MLRA 10:8)
(Warehouses) (Cargo handling)

RYSKIN, Mark Veniaminovich; YERMACHKOVA, G.S., red.izd-va; TYSHKEVICH, Z.V., tekhn.red.

[Asbestos; market of capitalist countries] Asbest; rynok kapitalisticheskikh stran. Moskva, Vneshtorgizdat, 1960. 185 p. (MIRA 13:5)

(Asbestos)

RYSKIN, M.Ya.; TSVETKOV, I.T.; MITROFANOV, S.I., prof., rukovoditel' raboty; Prinimali uchastiye: BAKHTEYEV, N.Ye.; KOLOSOV, A.A.; SMOLYUK, L.P.

Combined filtration of fluxes and copper concentrate. TSvet. met. 36 no.12:76 D '63. (MIRA 17:2)

RYSKIN, N. V.

2783. RYSKIN, N. V. Rezervy Rosta Dokhodov Konopleseyushchikh Kolkhozov. (Na Primere Kolkhozov Dubenskogo Rayona, Mordov. ASSR). Khar'kov, 1954. 22s. 20sm. (M-vo Vyssh Obrazovaniya SSSR. Khar'k. Ordena Trud. Krasnogo Znameni S-kh In-t Im. V.V.Dokuchaeva). 100 ekz. Bespl.-(54-54927)

SO: Letopis' Zhurnal'nykh Statey, Vol. 42, Moskva, 1949.

"APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R001446510006-4"

RYSKIN, M.V.

2783. Rezervy Rosta dokhodov konoplese yushchikh kolkhozov. (Na Primere Kolkhozov Dubenskogo Rayona, Mordov. ASSR). Khar'kov, 1954, 22c 20cm.(M-vo vyssh. obrazovaniya SSSR. Khar'k. ordena Trud. Krasnogo Znameni S-KH. In-T im. V. V. Dokuchayeva) 100 zkz. Bespl. - (54-54927)

SO: Knizhnaya Letopis, Vol. 2, 1955

PREYSMAN, A.B.; RYSKIN, S.Ye.

Electric stimulation in late abortions. Zdrav.Turk. 3 no.2: 10-13 Mr-Ap '59. (MIRA 12:8)

1. Iz kafedry akusherstva i ginekologii (zav. - prof.A.B. Preysman) Turkmenskogo gosudarstvennogo instituta im. I.V. Stalina.

(ABORTION) (ELECTROTHERAPEUTICS)

S

Automatic Equipment for Electrolytic Descaling. S. E. Ryskin. (Vestnik Metallopromyshlennosti, 1940, No. 3, pp. 66–68). (In Russian). The process and equipment which the author describes are used in preference to sandblasting for the removal of scale from carburised parts at the Stalin Automobile Works. The process comprises the following operations: (1) Anodic degreasing in a solution of caustic soda and trisodium phosphate. The time taken is 10–15 min. with a current density of 5 amp. per sq. dm. at a temperature of 80–90° C. (2) Rinsing for 1 min. in water at 50° C. (3) Rinsing for 1 min. in cold water. (4) Cathodic descaling in a solution of sulphuric and hydrochloric acids containing sodium chloride with a current density of 7 amp. per sq. dm. at 6 V.; the time required is 10–15 min. at a temperature of 60–70° C. A number of lead anodes are used and the descaled surfaces are protected by a deposition of lead. (5) Rinsing for 1 min. in water at 50° C. (6) Rinsing for 1 min. in cold water. (7) The protective lead coating is removed by anodic treatment in alkaline solutions at a temperature of 50–60° C. in 8–10 min. (8) Rinsing for 1 min. in cold water. (9) Rinsing for 1 min. in water at 85–95° C.

The equipment is briefly described. Its output capacity amounts to 2600 sq. dm. per hr.

Superlinearity in the Luminescence and Photo-conductivity Phenomena and the Rose-Bube Theory

erroneous. On the other hand the results are in good agreement with the main ideas of the two-step theory (Refs 3,4) which assumes a rise of the quantum yield β with E. There are 9 references, 6 of which are Soviet and 3 English.

SUBMITTED: July 10, 1958

Card 3/3

L 11626-66 EWT(1)/EWT(m)/EWP(t)/ETI IJP(c) JD

ACC NR: AP5025307 SOURCE CODE: UR/0051/65/019/004/0635/0637

AUTHOR: Dubenskiy, K.K.; Kariss, Ya. E.; Ryskin, A.I.; Feofilov, P.P.; Khil'ko, G.I.

ORG: none

TITLE: Determination of the effective cross section of collisions of the second kind between mercury and zinc atoms

SOURCE: Optika i spektroskopiya, v. 19, no. 4, 1965, 635-637

TOPIC TAGS: collision cross section, mercury, zinc, fluorescence spectrum

ABSTRACT: The collision cross section was determined at 736K at high values of ΔE (the energy difference between the levels of the colliding atoms) for the Hg-Zn pair with an energy difference in levels Hg $6\,^3P_1$ and Zn $4\,^3P_1$ of 6911 cm^{-1}. The determination was based on the relative intensity of sensitized fluorescence of Zn 3076 Å ($4\,^3P_1 - 4\,^1S_0$) and Hg 2537 Å ($6\,^3P_1 - 6\,^1S_0$). The effective collision cross section was determined from the formula

$$\langle \sigma v \rangle = \frac{I_{Zn}}{I_{Hg}} \frac{A_{Zn}}{N_{Hg}} \frac{\nu_{Hg}^2}{\nu_{Zn}^2} \frac{\int_{-\infty}^{+\infty} \left[1 - e^{-k_{Hg}(v)l}\right] dv}{\int_{-\infty}^{+\infty} \left[1 - e^{-k_{Zn}(v)l}\right] dv}. \quad (1)$$

UDC: 539.186.3:546.49:546.47

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R001446510006-4

L 11626-66

ACC NR: AP5025307

where $\frac{I_{Zn}}{I_{Hg}}$ is the relative intensity of the fluorescence lines Zn 3076 Å and Hg 2537 Å; A_{Zn} is the probability of a spontaneous transition for zinc; N_{Hg} is the concentration of mercury atoms in the container; ν_{Hg}, ν_{Zn} are the frequencies of the fluorescence lines of mercury and zinc; l is the thickness of the luminescent layer. The value of $\langle \sigma v \rangle$ was found to be 5×10^{14} cm^3 sec^{-1}. If in order to evaluate σ it is assumed that v is the most probable velocity of the relative motion of zinc and mercury atoms, then $\sigma \sim 1 \times 10^{-18}$ cm^2. Orig. art. has: 2 formulas.

SUB CODE: 07, 20 / SUBM DATE: 26Dec64 / ORIG REF: 001 / OTH REF: 007

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R001446510006-4"

RYSKIN, A.I.; TKACHUK, A.M.; TOLSTOY, N.A.

Optical properties of cyanoplatinate compounds. Part 2. Opt. i spektr. 17 no.5:724-727 N '64. (MIRA 17:12)

MALYSHEV, G.M.; RYSKIN, A.I.

Applicability of fiber optics in a setup consisting of a Fabry-Perot interferometer and an electron-optical converter. Opt. i spektr. 17 no.5:799 N '64. (MIRA 17:12)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R001446510006-4"

L 15557-66 EWT(1) AT

ACC NR: AP6004420 SOURCE CODE: UR/0051/66/020/001/0172/0173

AUTHOR: Reut, Ye. G.; Ryskin, A. I.

ORG: none

TITLE: Radiative levels of the Pr^3 ion in crystals of the scheelite type

SOURCE: Optika i spektroskopiya, v. 20, no. 1, 1966, 172-173

TOPIC TAGS: praseodymium tungstate, molybdate, calcium compound, lead compound, phosphor crystal, stimulated emission, electron energy level, solid state physics

ABSTRACT: The authors studied the absorption and luminescence spectra of $CaWo_4$-Pr and $PbMoO_4$-Pr crystals in the 3000-25,000 cm^{-1} region to determine the mechanism responsible for stimulated radiation of the trivalent praseodymium ion in crystals of the scheelite type. The duration of the excited state for various luminescent transitions was also studied. The experimental data indicate that transitions from the $^1G_4$ level of the Pr^3 ion in scheelite crystals are non-radiative and that the emission line at 1.0468 μ is due to the $^1D_2$-$^3F_4$ transition. A diagram is given showing the position of energy levels in the trivalent praseodymium ion in crystals

of the scheelite type. The short duration of the excited state for transitions from the $^3P_0$ level is apparently due to the fact that radiative transitions from this level "shunt" the non-radiative transition from the $^3P_0$ level to the $^1D_2$ level. Due to interaction with lattice vibrations, the population of these levels is determined by the Boltzmann rule; only the $^3P_0$ level is populated at 77°K. The authors are grateful to A. M. Morozov for preparation of the crystals and to P. P. Feofilov for interest in this work. Orig. art. has: 1 figure.

SUB CODE: 20/ SUBM DATE: 05Apr65/ ORIG REF: 003/ OTH REF: 002

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R001446510006-4"

RYSKIN, A.I.; TKACHUK, A.M.; TOLSTOY, N.A.

Optical properties of cyanoplatinate compounds. Opt. i spektr. 17 no.4:565-570 O '64. (MIRA 17:12)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R001446510006-4"

ACC NR: AP6033558 SOURCE CODE: UR/0181/66/008/010/2974/2976

AUTHOR: Ryskin, A. I.

ORG: none

TITLE: Influence of relative dimensions of the ions of the host and impurity ions on the macrostructure of activated crystals

SOURCE: Fizika tverdogo tela, v. 8, no. 10, 1966, 2974-2976

TOPIC TAGS: activated crystal, rare earth element, impurity center, crystal symmetry

ABSTRACT: This is a continuation of earlier work (Opt. i spektr. v. 21, no. 5, 1966) devoted to the types of centers produced by the activating material in a crystal (Pr^{3+} in $PbMoO_4$). Inasmuch as the results obtained in the earlier investigation were unique, and the Pr^{3+} ion produced a large number of other lower-symmetry activation centers in $CaWO_4$, which have the same structure as $PoMoO_4$, the author proposes that the difference is connected with the closeness of the ionic radii of Pr^{3+}, Ca^{2+} in the host, and Na^{+} (used for charge compensation). It is furthermore proposed that in principle predominantly tetragonal centers can be produced in a number of crystals of thescheelite type by varying the radii of the co-activating ions. All that is necessary for this purpose is to make the closeness of the rare-earth ion to the compensating ion convenient geometrically. Several examples from the literature, illustrating the presence of such an influence of the relative dimensions of the impurity ions and the host ions, are presented. The author thanks Ye. G. Reut for help and P. P. Feofilov for interest

ACC NR: AP6033558

in the work. Orig. art. has: 2 figures.

SUB CODE: 20/ SUBM DATE: 06Mar66/ ORIG REF: 003/ OTH REF: 001

ACC NR: AP/000026 SOURCE CODE: UR/0051/66/021/005/0564/0573

AUTHOR: Morozov, A. M.; Reut, Ye. G.; Ryskin, A. I.

ORG: none

TITLE: Luminescence, absorption, and level scheme of the Pr^{3+} ion in single crystals of lead molybdate

SOURCE: Optika i spektroskopiya, v. 21, no. 5, 1966, 564-573

TOPIC TAGS: lead compound, luminescence spectrum, absorption spectrum, color center, crystal symmetry

ABSTRACT: The purpose of the investigation was to establish the types of centers and the nature of symmetry of rare-earth ions in crystals of the scheelite type, particularly for ions such as Pr^{3+} for which electron paramagnetic resonance is not observed. The tests were made on $PbMoO_4$ and $CaWO_4$ with Pr^{3+} content 0.5 - 4.0 mol.%, grown by the Czochralski method from a stoichiometric oxide mixture. The absorption and luminescence spectra were investigated in the range from 25 000 to 3 000 cm^{-1}. The measurements were made on the crystals with 0.5% Pr concentration. The phenomenological procedure used to determine the level symmetry and the level splitting is described. The results show that the Pr^{3+} ion in crystals of the scheelite type can be situated in a tetragonal field with mirror-rotation fourfold axes, and that the impurity ions or defects that realize the charge compensation do not eliminate this axis. On the basis of the experiments, it is deduced that the most likely model

tetragonal center in scheelite is one in which the Pr^{3+} replaces a Pb^{2+} ion and is sufficiently screened from the action of the compensating charge. The presence of a number of weak lines in the spectrum demonstrates that this is not the only type of center present in the scheelite. The parameters of the crystalline field are determined. The authors thank M. N. Tolstoy for photographing part of the spectra in the infrared region, B. P. Zakharchenya and L. M. Kanskaya for supplying the apparatus for the Zeeman-effect investigation and help in the work, P. P. Feofilov for interest in the work and useful discussions, and Graduate Student of the Kazan' State University for participating in earlier stages of the experiment. Orig. art. has: 3 figures, 3 formulas, and 3 tables.

SUB CODE: 20/ SUBM DATE: 02Jul65/ ORIG REF: 007/ OTH REF: 007

Thursday, September 26, 2002 CIA-RDP86-00513R001446510006-4"

43119
S/181/62/004/011/018/049
B104/B102

24.2600

AUTHORS: Tolstoy, N. A., Khil'ko, G. I., Ryskin, A. I., and Trusov, A. A.

TITLE: The relation between the luminescence and photoelectric properties in a ZnS-Mn phosphor

PERIODICAL: Fizika tverdogo tela, v. 4, no. 11, 1962, 3177 - 3184

TEXT: The object here is to establish quantitative and kinetic relations between photoelectric aspects and the luminescence of the photo-semiconduction mechanism in the ZnS-Mn phosphor, which has the property of scintilative deexcitation of luminescence. ZnS-Mn (10^{-3} g/g) placed in a capacitor is excited by two successive light flashes from two flash lamps positioned in front of a concave mirror. The interval between the light pulses is varied automatically from 0.1 to 10 sec. Intervals greater than 10 sec are regulated by hand. The first ultra-violet light pulse produces in the capacitor a current pulse corresponding to the motion of electrons in the direction of the incident beam. The second yellowish-green light pulse produces a signal whose amplitude depends on the time interval $t_{dark} \equiv t_d$ light pulses. It reaches a maximum for a certain time

The relation between the luminescence... S/181/62/004/011/018/049
B104/B102

ASSOCIATION: Gosudarstvennyy opticheskiy institut im. S. I. Vavilova, Leningrad (State Optical Institute imeni S. I. Vavilov, Leningrad)

SUBMITTED: June 21, 1962

Card 3/3

KOVALEV, N.A.; TKACHUK, A.M.; SOKOLOV, V.A.; BURLAKOV, A.V.; RYSKIN, A.I.; MANSUROVA, Z.S.; YEPIFANOV, M.V.

Flare-up of ZnS phosphors and concurrence of the luminescence bands. Izv.AN SSSR. Ser. fiz. 25 no.3:399-405 Mr '61. (MIRA 14:2)
(Zinc sulfide spectra)

TOLSTOY, N.A.; TKACHUK, A.M.; RYSKIN, A.I.

Flare luminescence. Part 3: Effect of the intensity of exciting and de-exciting light. Opt. i spektr. 10 no.2:220-224 F '61. (MIRA 14:2)

(Luminescence)

20816

S/048/61/025/003/035/047
B104/B202

9.4160 (also 1137, 1395)

AUTHORS: Tolstoy, N. A., Tkachuk, A. M., Sokolov, V. A., Burlakov, A. V., Ryskin, A. I., Mansurova, Z. S., and Yepifanov, M. V.

TITLE: Flash-heating of ZnS-phosphors and concurrence of luminescence bands

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, v. 25, no. 3, 1961, 399-405

TEXT: This paper was presented at the 9th conference on luminescence (crystal phosphors), Kiyev, June 20 to 25, 1960. Flash heating of phosphors is related to an accumulation of electrons or holes which occurs in the interval between two excitations. Proceeding from the scheme suggested by Schön and Klasens the authors discuss the processes occurring in this connection with the aid of the scheme shown in Fig. 1. They explain the filling of the blue and red luminescence centers with holes in the case of steady excitation. They also discuss the mechanism of flash heating which leads to the concurrence of blue and red bands which had been described already by V. L. Levshin. On the basis of these considerations the authors study the dependence of the steady luminescence of short-wave bands on the intensity of the exciting light at different temperatures

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R001446510006-4

L 15258-65 EWT(m)/EWP(j) ESD-3/BSD/AFWL/ASD(a)-5/AS(mp)-2/AFMD(t)/APGC(b)/ESD(gs)/ESD(t) RM

ACCESSION NR: AP4048743 S/0051/64/017/005/0724/0727

AUTHORS: Ry*skin, A. I.; Tkachuk, A. M.; Tolstoy, N. A. B

TITLE: Optical properties of platinocyanide compounds. II. Absorption spectra and level scheme of the $[Pt(CN)_4]^{2-}$ ion in crystals of platinocyanide compounds

SOURCE: Optika i spektroskopiya, v. 17, no. 5, 1964, 724-727

TOPIC TAGS: platinum compound, optical spectrum, absorption spectrum, level scheme, absorption band, level transition

ABSTRACT: The absorption spectra of crystals of platinocyanides of barium, lithium, ytterbium, and erbium were investigated at temperatures 300, 77, 4.2K. It is shown that the long-wave absorption band of all crystals breaks up at 4.2K into two bands, which are ascribed to the transitions $5d_{z^2}(A_{1g}) \rightarrow 6p_z(A^*_{2u})$ and $5d_{yx,xx}(E_g) \rightarrow 6p_z(A^*_{2u})$.

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R001448510006-8

L 15258-65
ACCESSION NR: AP4048743

It is shown further that the level scheme proposed by C. Moncuit and H. Poulet (J. phys. rad. v. 23, 6, 353, 1962) for the complex $[Pt(CN)_4]^{2-}$ in platinocyanide crystals can be used to interpret the low-temperature absorption spectra. Some modifications of the level positions are made on the basis of a level scheme for the complex in an aqueous solution of the platinocyanide, previously discussed by the authors (Opt. i spektr. v. 17, 4, 1964). Orig. art. has: 3 figures and 1 table.

ASSOCIATION: None

SUBMITTED: 16Dec63 ENCL: 00

SUB CODE: OP, IC NR REF SOV: 001 OTHER: 004

Card 2/2

ZAKHARCHENYA, B.P.; RUSANOV, I.B.; RYSKIN, A.Ya.

Zeeman effect of a resonance line (4130 Å) in the spectrum of the CaF_2-Eu^{2+} crystal. Opt. i spektr. 18 no.6:999-1010 Je '65. (MIRA 18:12)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R001446510006-4

L 63960-65 EWT(1)/EWT(m)/EPF(c)/T/EWP(t)/EEC(b)-2/EWP(b) IJP(c)
JD/JW/GG

ACCESSION NR: AP5016172 UR/0051/65/018/006/0999/1010
539.184.28:548.0

AUTHOR: Zakharchenya, B. P.; Rusanov, I. B.; Ryskin, A. Ya.

TITLE: The Zeeman effect of the resonance line (4130 Å) in the spectrum of a CaF_2-Eu^{2+} crystal

SOURCE: Optika i spektroskopiya, v. 18, no. 6, 1965, 999-1010

TOPIC TAGS: Zeeman effect, optical resonance, spectrum line, paramagnetic resonance, calcium fluoride laser, calcium fluoride

ABSTRACT: Variation in the intensities of the Zeeman components of the 4130 Å "resonance" line in the spectrum of a CaF_2-Eu^{2+} crystal is experimentally studied at 4.2 and 1.7K. A Zeeman transition diagram is constructed on the basis of these experiments and group-theoretical analysis is conducted for the complex case of the Zeeman effect in a cubic crystal when the lower $^8S_{7/2}$ level is split into eight sublevels and the upper excited $^4\Gamma_8^+$ level is split into four sublevels. The behavior of the $^4\Gamma_8^+$ level in a magnetic field may be described by a spin Hamiltonian of the type $\mathcal{H} = g\mu S + f\mu S^3$.

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R001446510006-4

L 63960-65

ACCESSION NR: AP5016172

It was found that Zeeman splitting at 4130 Å results in circularly polarized components. Study of the Zeeman effect for this line shows that the spin-lattice relaxation time is very short for Zeeman sublevels of the excited state (less than $7 \cdot 10^{-7}$ seconds). The use of CaF_2-Eu^{2+} for optical detection of paramagnetic resonance in the excited state is discussed. "In conclusion, the authors consider it their duty to thank Ye. F. Gross and P. P. Feofilov for interest in the work and also V. P. Makarov and G. Bir for consultation." Orig. art. has: 4 figures, 4 formulas, and 4 tables. [14]

ASSOCIATION: none

SUBMITTED: 07May64 ENCL: 00 SUB CODE: SS, OP

NO REF SOV: 007 OTHER: 009 ATD PRESS: 4071

ACC NR: AT6034035 SOURCE CODE: UR/0000/66/000/000/0126/0130

AUTHORS: Zakharchenya, B. P.; Rusanov, I. B.; Ryskin, A. Ya.

ORG: none

TITLE: Magneto-optic effects in the spectrum of a CaF_2-Eu^{2+} crystal

SOURCE: Simpozium po spektroskopii kristallov, soderzhashchikh redkozemel'nyye elementy i elementy gruppy zheleza. Moscow, 1965. Spektroskopiya kristallov (Spectroscopy of crystals); materialy simpoziuma. Moscow, Izd-vo Nauka, 1966, 126-130

TOPIC TAGS: magnetooptic effect, Zeeman effect, electron paramagnetic resonance, Hamiltonian

ABSTRACT: Splitting of the resonance line for CaF_2-Eu^{2+} was studied in both absorption and emission spectra. When the magnetic field was parallel to the fourth-order axis (H_0 parallel to [001]), the spectrogram plainly revealed asymmetry in intensity of the Zeeman component relative to the line not affected by the field. This asymmetry is clearly due to thermal freezing of the ions in strong magnetic fields. At low temperatures this occurs on Zeeman sublevels of the ground and excited states. From the experimental data on Zeeman splitting of λ_0 4130 Å with different crystal orientations in the magnetic field, it is established that the behavior of the excited level is defined by a spin Hamiltonian of the type

$$\mathcal{H} = g\beta HS + \beta HS$$

where g and β are parameters determined from experiment and are related to the Lande splitting factor. It was found that $|g| = 3.9 \pm 0.1$ and $|f| = 2.4 \pm 0.1$, and that the two are of opposite signs. Tentative theoretical considerations do not agree with this result, but the authors do not consider this too serious since the premises for the theory of interaction between mixed configurations and the crystalline field are highly speculative. This scheme permits examination of a number of possibilities in optical detection of electron paramagnetic resonance in CaF_2-Eu^{2+}. Detection of resonance may be due to selective reabsorption of the Zeeman component of emission. It may also be due to competition in intensities of resonance Zeeman transitions in absorption and emission. Orig. art. has: 4 figures and 1 equation.

SUB CODE: 20/ SUBM DATE: 25May66

ZAKHARCHENYA, B.P.; RYSKIN, A.Ya.

Magnetooptical phenomena in the absorption and emission spectra of CaF_2-Eu^{++} crystals. Opt. i spektr. 14 no.2:309-311 F '63. (MIRA 16:5)

(Magnetooptics) (Crystals—Spectra)

ACCESSION NR: AP4043009 S/0051/64/017/002/0219/0229

AUTHORS: Zakharchenya, B. P.; Makarov, V. P.; Ry*skin, A. Ya.

TITLE: Zeeman effect for f-d transitions in the spectra of rare earth fluoride crystals activated with Sm^{2+}

SOURCE: Optika i spektroskopiya, v. 17, no. 2, 1964, 219-229

TOPIC TAGS: Zeeman effect, absorption spectrum, emission spectrum, rare earth compound, fluoride, samarium, group theory

ABSTRACT: This is a continuation of earlier investigations (B. P. Zakharchenya and A. Ya. Ry*skin, Opt. i spektr. v. 13, 875, 1962 and v. 14, 309, 1963), and contains additional experimental facts and a more thorough theoretical discussion. The article reports on the results of experimental and theoretical investigation of the Zeeman effect of the most intense emission lines in crystals of the type MeF_2-Sm^{2+} (where Me = Ca, Sr, or Ba) and of the narrow absorp-

tion lines in CaF_2-Sm^{2+} and SrF_2-Sm^{2+}. The experiments were performed with single crystals MeF_2-Sm^{2+} containing a variable amount of Sm^{2+}, up to 0.5%, with the crystals cut in such a way as to permit their orientation in a magnetic field parallel to the four-fold, three-fold, or two-fold axis. The observation was made in polarized light in a direction perpendicular to the magnetic field, with the crystals cooled with liquid helium. The experimental data were analyzed on the basis of group-theoretical representations for the f-d transitions in the crystal. Two approximations were used in the calculation of the states of the f^5d configuration. In one the interaction of the f^5 electrons with the crystal field is assumed stronger than their interaction with the d-electron, and the other the interaction of the d-electron with the f^5 core is assumed stronger than the interaction of the f^5 electron with the field. The second approximation agrees better with the experimental data. "The authors are grateful to Ye. F. Gross and P. P. Feofilov

ACCESSION NR: AP4043009

for interest in the work, and also to A. G. Zhilich for many useful consultations on questions connected with the group-theoretical calculations." Orig. art. has: 4 figures, 7 formulas, and 2 tables.

ASSOCIATION: None

SUBMITTED: 29Jul63 ENCL: 00

SUB CODE: OP NR REF SOV: 007 OTHER: 009

ACCESSION NR: AP4020956 S/0051/64/016/003/0455/0460

AUTHOR: Zakharchenya,B.P.; Makarov,V.P.; Varfolomeyev,A.V.; Ry*skin,A.Ya.

TITLE: Zeeman splitting of the principal emission line in $CaF_2:Tm^{2+}$ crystals

SOURCE: Optika i spektroskopiya, v.16, no.3, 1964, 455-460

TOPIC TAGS: Zeeman effect, Zeeman splitting, thulium doped calcium fluoride, thulium activated calcium fluoride, calcium fluoride, thulium 2+, thulium ion, crystal structure, transition probability

ABSTRACT: Observation of the Zeeman effect in the spectra of crystals doped with transition-group ions can yield information on the symmetry of the states involved in the detected transitions, the multipole order of the transitions, and on the crystal structure and field. Zeeman splitting in the optical spectra of $CaF_2:RE^3$ (RE = rare earth) crystals was first observed and investigated by V.A.Arkhangel'skaya and P.P.Feofilov (Opt@.i spetm,4,602,1958) and has subsequently been studied by other authors. The present work is devoted to investigation - experimental and theoretical - of Zeeman splitting of the intense 1.116-μ line of the divalent thulium ion in CaF_2. The associated transition is identified. The infrared

spectra were observed by means of a DFS-12 double monochromator in which the standard diffraction grating was replaced by a special grating with 600 lines/mm and which concentrated 76% of the light in the 0.8 to 2.5-μ region. The linear dispersion was 10 Å/mm. The radiation detector was a liquid-nitrogen-cooled FEU-22 photomultiplier. The field was produced by a magnet with 30-mm-diameter Permendur pole pieces and a gap of 20 mm; the highest field strength was 40-kOe. The $CaF_2:Tm^{2+}$ single crystals were prepared by gamma-irradiation of $CaF_2:Tm^{3+}$ crystals. The specimens were cooled to 77 and 4.2°K. The splitting in the 40 kOe field varies in the range from under 3 to over 9 cm^{-1}, depending on the orientation of the magnetic field, the direction of observation, and the orientation of the electric vector of the light. The components of the doublet are not always equal. The results are analyzed from the theoretical standpoint. An attempt made to observe the splitting of the second intense line at 1.189 μ proved vain for reasons that are still obscure. "The authors acknowledge their gratitude to Ye.F.Gross for his interest in the work and to P.P.Feofilov for useful suggestions." Orig.art.has: 25 formulas and 3 figures.

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R001446510006-4

L 63960-65 EWT(l)/EWT(m)/EPF(c)/T/EWP(t)/EEC(b)-2/EWP(b) IJP(c)
JD/JW/GG

ACCESSION NR: AP5016172 UR/0051/65/018/006/0999/1010
539.184.28:548.0

AUTHOR: Zakharchenya, B. P.; Rusanov, I. B.; Ryskin, A. Ya.

TITLE: The Zeeman effect of the resonance line (4130 Å) in the spectrum of a CaF_2-Eu^{2+} crystal

SOURCE: Optika i spektroskopiya, v. 18, no. 6, 1965, 999-1010

TOPIC TAGS: Zeeman effect, optical resonance, spectrum line, paramagnetic resonance, calcium fluoride laser, calcium fluoride

ABSTRACT: Variation in the intensities of the Zeeman components of the 4130 Å "resonance" line in the spectrum of a CaF_2-Eu^{2+} crystal is experimentally studied at 4.2 and 1.7K. A Zeeman transition diagram is constructed on the basis of these experiments and group-theoretical analysis is conducted for the complex case of the Zeeman effect in a cubic crystal when the lower $^8S_{7/2}$ level is split into eight sublevels and the upper excited $^4\Gamma_8^+$ level is split into four sublevels. The behavior of the $^4\Gamma_8^+$ level in a magnetic field may be described by a spin Hamiltonian of the type $\mathcal{H} = g\beta HS + \gamma HS^3$.

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APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R001446510006-4

L 63960-65

ACCESSION NR: AP5016172

It was found that Zeeman splitting at 4130 Å results in circularly polarized components. Study of the Zeeman effect for this line shows that the spin-lattice relaxation time is very short for Zeeman sublevels of the excited state (less than $7 \cdot 10^{-7}$ seconds). The use of CaF_2-Eu^{2+} for optical detection of paramagnetic resonance in the excited state is discussed. "In conclusion, the authors consider it their duty to thank Ye. F. Gross and P. P. Feofilov for interest in the work and also V. P. Makarov and G. Bir for consultation." Orig. art. has: 4 figures, 4 formulas, and 4 tables. [14]

ASSOCIATION: none

SUBMITTED: 07May64 ENCL: 00 SUB CODE: SS, OP

NO REF SOV: 007 OTHER: 009 ATD PRESS: 4071

ZAKHARCHENYA[illegible], B.P.; [illegible], V. ; [illegible], A. Ya.

Zeeman effect of ? - d - transitions in the spectra of alkaline-earth fluoride crystals activated by Sm^{++}. Opt. i spektr. 17 no.2:219-229 Ag'64 (MIRA 17:8)

RYUKHIN, N.V., kand.tekhn.nauk; RYSOVA, A.P., starshiy nauchnyy sotrudnik

New types of felts for the papermaking machines. Bum.prom. 37 no. 8:19-21 Ag '62. (MIRA 17:2)

ZAKHARCHENYA, B. P.; MYSKIN, A. Ya.

Zeeman effect in the absorption spectrum and luminescence of CaF_2 - Sm^{++} and SrF_2 - Sm^{++} crystals. Opt. i spektr. 13 no.6: 875-877 D '62. (MIRA 16:1)

(Magnetooptics)
(Calcium fluoride crystals--Spectra)
(Strontium fluoride crystals--Spectra)

30799
S/003/011/045/056

24.3600 (1035, 1144, 1385, 1147)

AUTHORS: Zakharchenya, B. P., Sibileva, A. I., Kanskaya, L. M., and Ryskin, A. Ya.

TITLE: Zeeman effect on B_1 and B_2 lines of the absorption spectrum of ruby in strong pulsed magnetic fields

PERIODICAL: Fizika tverdogo tela, v. 3, no. 11, 1961, 3531-3533

TEXT: Zeeman splitting of B_1 and B_2 absorption lines of ruby was achieved by applying pulsed magnetic fields of up to 130,000 oersteds. The C_3 principal axis of the ruby crystals was perpendicular to the direction of observation. It could be orientated perpendicular to, or in the direction of, the magnetic field H. In the diagram showing the results the distances between the components of the quartets are unequal, which is appropriate for the splitting of the principal level ($\sigma = 0.38\ cm^{-1}$) in the absence of magnetic field. The fact of quartet splitting is in good agreement with the paramagnetic resonance data and theory of S. Sugano

and Y. Tanabe (J. Phys. Soc. Japan, 13, 880, 1958). The asymmetrical intensity of the edge components of the line splitting does not agree with theory. The spectroscopic splitting factor of the excited level differs from the theoretical value by -0.6 for the B_2 line and by about +0.30 for the B_1 line. This indicates considerable theoretical error. A later paper will discuss the experimental error for this kind of investigation. Corresponding Member AS USSR Ye. F. Gross is thanked for his interest. There are 1 figure and 3 references: 1 Soviet and 2 non-Soviet. The two references to English-language publications read as follows: S. Sugano, Y. Tanabe, J. Phys. Soc. Japan, 13, 880, 1958; S. Sugano, J. Tsujikawa. J. Phys. Soc. Japan, 13, 899, 1958.

ASSOCIATION: Fiziko-tekhnicheskiy institut im. A. F. Ioffe AN SSSR (Physicotechnical Institute imeni A. F. Ioffe AS USSR, Leningrad)

SUBMITTED: July 10, 1960

"APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R001446510006-4"

RYSKIN, B. Z.

"Laying Cable Lines in Cities With Extensive Underground Installations," "Operation of Cable Networks" (Eksploatatsiya kabeley i kabel'nykh setey), Gosenergoizdat, 1949, 384 pp.

ARMAND, N.A.; VVEDENSKIY, B.A.; GUSYATINSKIY, I.A.; IGOSHEV, I.P.; KAZAKOV, L.Ya.; KALININ, A.I.; KOLOSOV, M.A.; LEVSHIN, I.P.; LOMAKIN, A.N.; NAZAROVA, L.G.; NEMIROVSKIY, A.S.; PROSIN, A.V.; RYSKIN, E.Ya.; SOKOLOV, A.V.; TARASOV, V.A.; TRASHKOV, P.S.; TIKHOMIROV, Yu.A.; TROITSKIY, V.N.; FEDOROVA, L.V.; CHERNYY, F.B.; SHABEL'NIKOV, A.V.; SHIREY, R.A.; SHIFRIN, Ya.S.; SHUR, A.A.; YAKOVLEV, O.I.; ARENBERG, N.Ya., red.

[Long-distance tropospheric propagation of ultrashort radio waves] Dal'nee troposfernoe rasprostranenie ul'trakorotkikh radiovoln. Moskva, Sovetskoe radio, 1965. 414 p. (MIRA 18:9)

GUSYATINSKIY, I.A.; RYSKIN, E.Ya.

Theoretical and experimental study of the power of transient interference during multibeam reception. Elektrosviaz' 16 no.12:3-13 D '62. (MIRA 16:1)

(Radio relay lines)
(Microwave communication systems)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R001446510006-4

L 32835-65 FSS-2/EWT(d)/EEC(t)/EEC-4 Pn-4/Pp-4/Pac-4
ACCESSION NR: AP5005579 S/0106/65/000/002/0024/0033

AUTHOR: Gusyatinskiy, I. A.; Ryskin, E. Ya.

TITLE: Theoretical and experimental investigation of the fluctuations of amplitude and phase of the modulating signal in an FM multipath channel

SOURCE: Elektrosvyaz', no. 2, 1965, 24-33

TOPIC TAGS: multipath communication, multipath transmission, FM radio telegraphy

ABSTRACT: A theoretical investigation is presented of the amplitude and phase fluctuations of the first harmonic at the output of a frequency detector, with a single-tone sinusoidal modulation and a signal transmission over a multipath channel having random parameters. The amplitude fluctuation grows with the higher modulating frequency, i. e., the net attenuation decreases. The integral distribution of the group transmission time and of the first-harmonic amplitude is

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R001446510006-4

L 32835-65

ACCESSION NR: AP5005579

found for a double reception with a linear signal addition and for a quadruple reception with an automatic selection of the best of four signals. Some theoretical formulas were experimentally verified on a 300-km-long route, with a 1°-wide directional pattern; a 275-kc sinusoidal signal was used to frequency-modulate the transmitter with a maximum deviation of 140 kc. Some experimental data is presented. Orig. art. has: 5 figures and 55 formulas.

ASSOCIATION: none

SUBMITTED: 09Jun64 ENCL: 00 SUB CODE: EC

NO REF SOV: 005 OTHER: 000

Card 2/2

AM5027749 Monograph UR/ 20

Armand, N. A.; Vvedenskiy, B. A.; Gusyatinskiy, I. A.; Igoshev, I.P.; Kazakov, L. YA.; Kalinin, A. I.; Nazarova, L. G.; Nemirovskiy, A. S.; Prosin, A.V.; Ryskin, E. YA.; Sokolov, A. V.; Tarasov, V.A.; Tashkov, P. S.; Tikhomirov, YU. A.; Troitskiy, V. N. Fedorova, L. V.; Chernyy, F. B.; Shabel'nikov, A. V.; Shirey, R. A.; Shiffrin, YA. S.; Shur, A. A.;;YAkovlev, O. I.; Kolosov, M. A.; Lovshin, I. P.; Lomakin, A. M.

Upper tropospheric propagation of ultrashort radio waves (Dal'neye troposfernoye rasprostraneniye ul'trakorotkikh radiovoln) Moscow, Izd-vo "Sovetskoye radio", 1965. 414 p. illus., biblio. 4000 copies printed.

TOPIC TAGS: radio wave propagation, tropospheric radio wave, radio communication, space communication, tropospheric scatter communication, signal processing, signal distortion, field theory

PURPOSE AND COVERAGE: This monograph is intended for specialists working in the field of radiowave propagation, designers of long-distance radio communication systems, and teachers and students of the advanced courses in schools of higher technical education. The monograph contains, for the most part, heretofore unpublished results of Soviet experimental and theoretical investigations in the field of long-distance tropospheric ultrashortwave propagation.

Card 1/10 UDC: 621.371.24

ACC NR AM5027749

Problems of investigating the troposphere by means of refractometers, the mean level of signals, meteorological conditions and topography, fluctuation of arrival angles and distortions of antenna directivity patterns, losses in antenna gain, and quick and slow fadings of signal levels are discussed. The statistical characteristics of the signals at diversity reception in time, space, frequency and angle as well as the distortion of signals in the communication systems are also investigated. The long-distance propagation theory is analyzed, and the engineering method of calculating field intensity at long-distance tropospheric propagation is given. At present, there is no theory of Long-Distance Tropospheric Propagation which can be applied effectively enough in practice. Thus, in the investigation of that propagation, considerable attention has to be paid to experiments. The special characteristics of geographical conditions of the territory involved should be taken into consideration during the analysis of experimental data and in their practical application because the conditions of propagation in arctic and tropical climates differ from those existing over seas and continents. A considerable part of the monograph deals with the investigations of long-distance tropospheric propagation carried out over dry land routes, 800 km long, in the central part of the USSR under the general supervision of B. A. Vvedenskiy and A. G. Arenberg (up to 1957). V. I. Siforov investigated problems con-

Card 2/10

nected with distortions and fluctuations of signals. References follow each chapter.

TABLE OF CONTENTS:

ACC NR AM6027710

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RYSKIN, E.Ya.

Threshold level of an F.M. receiver. Elektrosviaz' 18 no.6:1-7 Je '64. (MIRA 18:1)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R001446510006-4"

ACCESSION NR: AP4040998 S/0106/64/000/006/0001/0007

AUTHOR: Ry*skin, E. Ya.

TITLE: Threshold level of an FM receiver

SOURCE: Elektrosvyaz', no. 6, 1964, 1-7

TOPIC TAGS: telephony, FM receiver, signal noise ratio

ABSTRACT: The effect of the input signal-to-noise ratio on the output signal-to-noise ratio in a receiver whose carrier is frequency-modulated by a multichannel telephone signal is analyzed. The method of probabilistic weights suggested by V. A. Smirnov (Radiotekhnika, 1958, no. 9) is used. It is shown that the threshold area in the lower telephone channel is displaced into the strong-signal range as compared to the no-modulation case. This is explained by the fact that when the signal instantaneous frequency varies, the output signal amplitude varies according to the slope of the frequency response curve of the IF amplifier which

ACCESSION NR: AP4040998

affects the input signal-to-noise ratio. An experimental verification included the measurement of noise in a two-circuit resonance system (a) without modulation and (b) with modulation of the signal by a normal process. "In conclusion, I take this opportunity to thank S. V. Borodich and I. A. Gusyatinskiy for their help in the preparation of this article." Orig. art. has: 4 figures and 20 formulas.

ASSOCIATION: none

SUBMITTED: 08Jan64 ENCL: 00

SUB CODE: EC NO REF SOV: 004 OTHER: 000

GUSYATINSKIY, I.A.; RYSKIN, E.Ya.

Theoretical and experimental study of amplitude and phase fluctuations of the modulating signal in a multibeam channel with frequency modulation. Elektrosviaz' 19 no.2:24-33 F '65.
(MIRA 18:3)

RYSKIN, E.Ya.

Differentiation of random processes. Elektrosviaz' 16 no.6:72-72 Je '62. (MIRA 15:6)

(Information theory)

RYSKIN, G.Ya

Category : USSR/Atomic and Molecular Physics - Statistical Physics. D-3
Thermodynamics.

Abs Jour : Ref Zhur - Fizika, No 3, 1957, No 6256

Author : Konstantinov, B.I., Ryskin, G.Ya.
Inst : Leningrad Physical-Technical Institute, Acedemy of Sciences, USSR.
Title : Flotation Method of Measuring the Coefficient of Volume Expansion of Crystals.

Orig Pub : Dokl. AN SSSR, 1956, 108, No 3, 455-457

Abstract : By flotation method is meant a method of comparing the density ρ of a small crystal with the density of a liquid by observing the sinking or floating of the crystal in the liquid. The authors consider the possibility of employing this method to determine the coefficient of thermal expension α of a given crystal by comparing it with the value of α of another crystal, comprising either a quartz or a glass float. The "flotation mixture" (combination of crystal or a suspension of crystals and liquid) should be homogeneous and chemically stable, and the crystal and float should be

RYSKIN, G.Ya.

Measuring diffusion coefficients by means of radioactivation analysis and isotope dilution. Fiz. tver. tela 1 no.6:952-954 Je '59. (MIRA 12:10)

1.Leningradskiy fiziko-tekhicheskiy institut AN SSSR.
(Diffusion)

KONSTANTINOV, B.P.; BAYKOV, Yu.M.; RYSKIN, G.Ya.

Flotation method for measuring compression coefficients of solids and liquids. Fiz. tver. tela 1 no.6:963-969 Je '59.
(MIRA 12:10)

1.Leningradskiy fiziko-tekhnicheskiy institut AN SSSR.
(Compressibility)

KONSTANTINOV, B.P.; RYSKIN, G.Ya.; RYLOV, V.S.

Rate of element exchange between lithium amalgam and KCl aqueous solution. Zhur.fiz.khim. 36 no.8:1639-1645 Ag '62. (MIRA 15:8)

1. Leningradskiy fiziko-tekhnicheskiy institut, AN SSSR.
(Amalgams) (Potassium chloride) (Electrochemistry)

RYSKIN, G.Ya.; RYLOV, V.S.; TRUNOV, V.A.

Rate of isotopic exchange of potassium between potassium amalgam and aqueous solution of KCl. Zhur.fiz.khim. 36 no.10:2126-2131 O '62. (MIRA 17:4)

1. Leningradskiy fiziko-tekhnicheskiy institut imeni A.F.Ioffe.

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R001440510006-4

L 43900-65 EPF(n)-2/EPA(s)-2/EWA(c)/EWT(m)/EWP(b)/T/EWP(t) Pt-7/Pu-4/Peb
DIAAP/IJP(c) JD/JG
ACCESSION NR: AP5006868 S/0181/65/007/003/0695/0696

AUTHOR: Naumov, A. N.; Ryskin, G. Ya. 45 44 B

TITLE: Isotopic effect of diffusion of lithium in sodium

SOURCE: Fizika tverdogo tela, v. 7, no. 3, 1965, 695-696

TOPIC TAGS: isotopic effect, diffusion, lithium, sodium, diffusion coefficient ratio

ABSTRACT: Results are presented of the measurements of the isotopic effective diffusion of lithium in sodium at 80C. Polycrystalline samples were used in the form of cylinders 1.8 cm in diameter and 5 cm long. The initial lithium comprised 7.9% Li^6 and 92.1% Li^7. The procedure of the experiments was described earlier (FTT v. 6, 2517, 1964). The ratio of the diffusion coefficients of the isotopes was found to be 1.073 ± 0.006, in good agreement with the theoretical value 1.08 (square root of the ratio of the isotope masses). The method of separating the diffused lithium from the sodium is described. Orig. art. has: 2 formulas and 1 table.

Card 1/2

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R001440510006-4

L 43900-65

ACCESSION NR: AP5006868

ASSOCIATION: Fiziko-tekhnicheskiy institut im. A. F. Ioffe AN SSSR, Leningrad (Physicotechnical Institute, AN SSSR)

SUBMITTED: 18Jun64 ENCL: 00 SUB CODE: NP, SS

NR REF SOV: 005 OTHER: 001

Card 2/2 mb

L 39575-66 EWT(1)/EWT(m)/T DJ/GD

ACC NR: AP6000432 SOURCE CODE: UR/0292/65/000/010/0014/0016

AUTHOR: Plyushch, B. M. (Doctor of technical sciences; Professor); Ryskin, L. L. (Engineer)

ORG: none

TITLE: Operation of a sliding contact in d-c motors submerged in a liquid dielectric

SOURCE: Elektrotekhnika, no. 10, 1965, 14-16

TOPIC TAGS: dc motor, submersible dc motor

ABSTRACT: An experimental investigation of the operation of d-c motor brushes submerged in transformer oil is reported. A PN-68, 220-v, 33-amp, 6.2-kw, 1460-rpm d-c motor with a 125-mm diameter commutator was equipped with a device for adjusting the pressure exerted on 10 x 25 x 32-mm brushes; the entire motor was submerged into transformer oil whose temperature could be controlled. Hard carbon (T-2) brushes exhibited the best sparkless performance at speeds up to 2200 rpm and loads up to 1.25 nominal. An auxiliary textolite "guard" brush with its separate spring was found to be of some merit, particularly at lower speeds and temperatures. A pressure of 5—6 kg/cm^2 is recommended for speeds of 10—12 m/sec and oil temperatures of 40—50C. Three other d-c motors (6.2, 6.2, and 0.8 kw) operated successfully in the test oil tank. Orig. art. has: 5 figures.

SUB CODE: 09 / SUBM DATE: none / ORIG REF: 003

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R001446510006-4"

PIYUSHCH, B.M., doktor tekhn.nauk, prof.; RYSKIN, L.L., inzh.

Performance of the slide contacts of d.c. motors in a liquid dielectric media. Elektrotekhnika 36 no.10:14-16 O '65. (MIRA 18:10)

TURGEL', Ye.O.; RYSKIN, M.I.; SHMULYAKOVSKIY, Ya.E.; RUDOY, S.A.

Analytical control of the process of disproportionation of rosin. Gidroliz. i lesokhim.prom. 16 no.1:19-21 '63. (MIRA 16:2)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut neftekhimicheskikh protsessov.

(Oleoresins)

GOLOVIN, G.F., kandidat tekhnicheskikh nauk; RYSKIN, S.Ye.; SHEKALOV, A.A., kandidat tekhnicheskikh nauk.

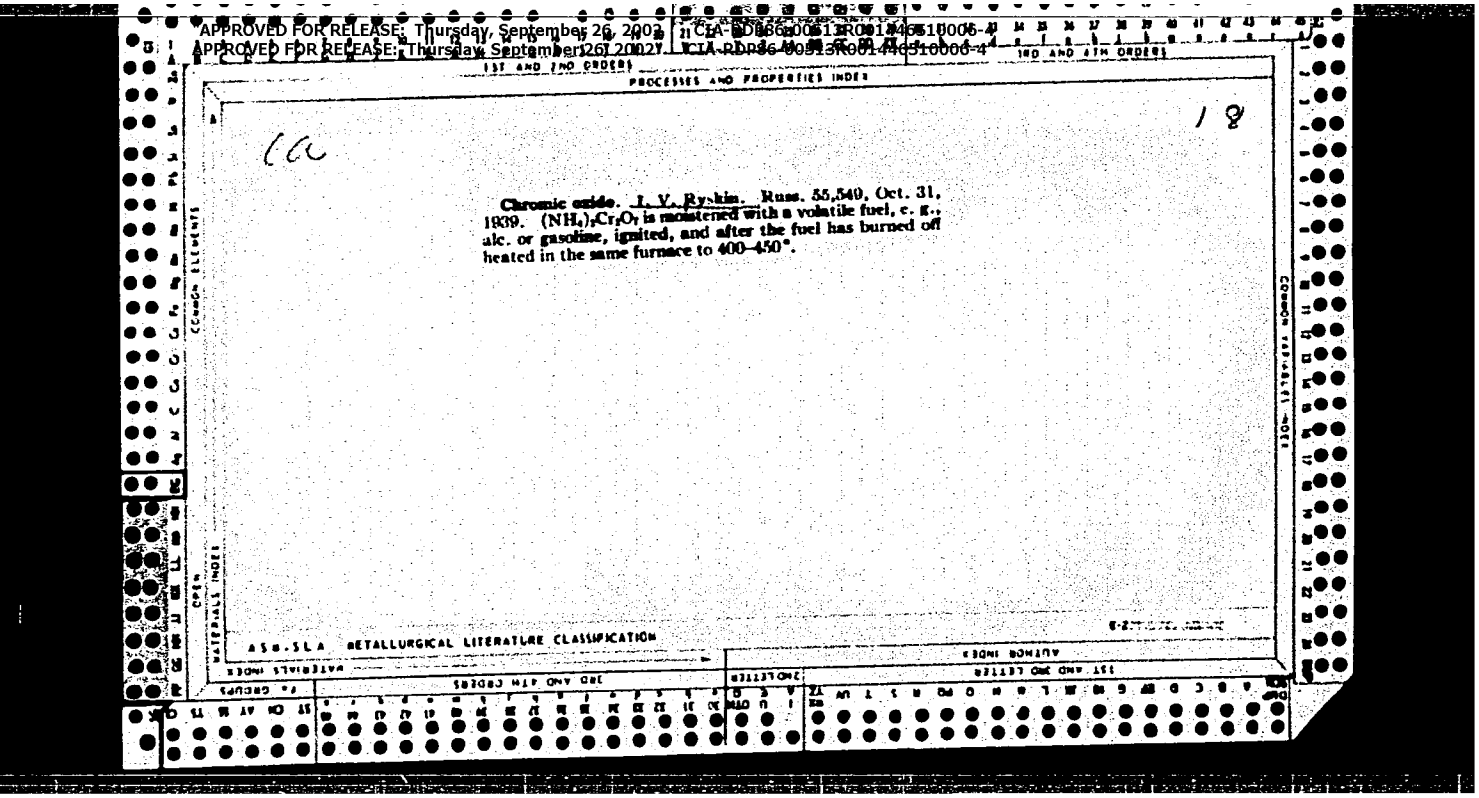
Centrifugal lining of bimetallic bushings with lead bronze. Avt. i trakt. prom. no.5:44-46 My '57. (MIRA 10:6)

1. Nauchno-issledovatel'skiy institut tokov vysokoy chastoty.
(Bearings (Machinery)) (Lead bronze)

RYSKIN, A.I.

A wide dispersion, high resolution spectrograph. Izv. AN SSSR. Ser. fiz. 19 no.1:81-82 Ja-F '55. (MLRA 8:9)
(Spectrum analysis) (Spectrometer)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R001446510006-4



PROCESSES AND PROPERTIES INDEX

1ST AND 2ND ORDERS

3RD AND 4TH ORDERS

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Chromic oxide. I. V. Ryshin. Russ. 55,549, Oct. 31, 1939. $(NH_4)_2Cr_2O_7$ is moistened with a volatile fuel, e. g., alc. or gasoline, ignited, and after the fuel has burned off heated in the same furnace to 400–450°.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

MATERIALS INDEX

1ST AND 2ND LETTER

AUTHOR INDEX

RYSKIN, G.Ya.; RYLOV, V.S.

Separation of potassium isotopes by electrolysis on a mercury cathode and by crystallization of potassium chloride. Zhur. fiz. khim. 36 no.9:1854-1859 S '62. (MIRA 17:6)

1. Leningradskiy fiziko-tekhnicheskiy institut AN SSSR.

NAUMOV, A.N.; RYSKIN, G.Ya.

Self-diffusion in solid lithium. Zhur.tekh.fiz. 29 no.2:189-191 F '59. (MIRA 12:4)

1. Leningradskiy fiziko-tekhnicheskiy institut.
(Lithium) (Diffusion)

SOV/57-58-8-22/37

AUTHORS: Konstantinov, B. P., Yefremova, Z. N., Ryskin, G. Ya.

TITLE: Expansion Coefficient Measurements of NaCl, LiF, KCl, and KBr by the Flotation Method (Izmereniye koeffitsiyentov rasshireniya NaCl, LiF, KCl, KBr flotatsionnym metodom)

PERIODICAL: Zhurnal tekhnicheskoy fiziki, 1958, Nr 8, pp 1740 - 1747 (USSR)

ABSTRACT: In this paper a detailed description is presented of the technique of measuring the expansion coefficients of salt crystals according to the flotation method. The application of floaters for the determination of the temperature coefficient of the density β of a fluid is suggested. This method is based upon the measurement of the temperature difference of the flotation of two floaters kept in the fluid to be investigated and in a control fluid, the β of which is known. The room temperature expansion coefficients γ_k of NaCl, KCl, KBr, LiF were measured. The reproducibility of the measurements is as high as 0,5 - 1%. This is in accordance with the estimation of the accuracy of this method presented by Konstantinov and Ryskin in reference 1. The measured values

Card 1/2

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R001446510006-4"

Expansion Coefficient Measurements of NaCl, LiF, KCl, and KBr by the Flotation Method SOV/57-58-8-22/37

of γ_k agree satisfactorily with most recent interferometric and X-ray analysis measurements of the expansion coefficients of the respective salts. There are 4 tables and 11 references, 2 of which are Soviet.

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

SUBMITTED: October 11, 1957

KONSTANTINOV, B.P.; YEFREMOVA, Z.N.; RYSKIN, G.Ya.

Measurement of NaCl, LiF and KBr expansion coefficients by the flotation method. Zhur. tekh. fiz. 28 no. 8:1740-1747 Ag '58. (MIRA 11:10)

1. Leningradskiy fiziko-tekhnicheskiy institut AN SSSR.
(Alkali halide crystals)
(Flotation)

RYSKIN, APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R001446510006-4

Flotation method of measurement of the expansion coefficients of crystals. B. P. Konstantinov and G. Ya. Ryskin (Phys.-Tech. Inst., Leningrad). *Doklady Akad. Nauk S.S.S.R.* 103, 455-7(1956).—The flotation method used for the detn. of isotope compn. and of at. wt. gave more accurate results than did other methods, and the possibility was explored of using this method to det. the expansion coeff. of crystals, based on an accurate detn. of the difference between the d. of the crystal and of a float, of which the expansion coeff. is known. Quartz floats were selected as standards. A formula is derived for the d. comparison of 2 mixts. that are stable over a long time period, and that therefore are uniform, and in which neither the crystal nor the float are sol. The method was used for the detn. of the expansion coeffs. of NaCl, KCl, KBr, and LiF, but the data obtained are not reproduced.

W. M. Sternberg

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R001446510006-4

RYSKIN, G. Ya.

M. A. YOUTZ

2067

Energy of activation and the temperature coefficient of diffusion in polymers. G. Ya. Ryskin. *Zhur. Tekh. Fiz.* 25, 458-65(1955).—The rate of diffusion of gases and vapors into org. polymers is given by $D = D_0 e^{-E/RT}$. Values of D and E as detd. by the sorption method are given for poly(vinyl acetate) at 303°K. for water, various alcs., alkyl halides, benzene, and pyridine; poly(vinyl alc.) at 400°K.; for polystyrene at 301°K. for alcs. and alkyl halides; for poly(ethyl methacrylate) at 313°K.; for poly-(methyl acrylate) at 280°K.; for poly(methyl methacrylate) at 303°K.; for poly(butyl methacrylate) at 281°K. The experimentally detd. or true values of E are smaller than the theoretical values. Franz H. Rathmann

BM

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R001446510006-4"

KONSTANTINOV, B.P.; RYSKIN, G.Ya.

Flotation method for measuring volume expansion coefficients of crystals. Dokl.AN SSSR 108 no.3:455-457 My '56. (MLRA 9:8)

1. Chlen-korrespondent AN SSSR (for Konstantinov); 2. Leningradskiy fiziko-tekhnicheskiy institut Akademii nauk SSSR.
(Crystals--Measurement) (Expansion of solids)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R001446510006-4

RYSKIN, G. Ya.

USSR

9750* Activation Energy and Temperature Dependence of Diffusion in Polymers. Energiia aktivatsii i temperaturnaia zavisimost' diffuzii v polimerakh. (Russian.) G. Ya. Ryskin. *Zhurnal Tekhnicheskoi Fiziki*, v. 25, no. 3, Mar. 1955, p. 458-465.

Diffusion parameters in vinyl polymers. Graphs, tables. 7 ref.

RYSKIN, O. Ya.

USSR

Diffusion in polymers. G. N. Zhurkov and O. Ya. Ryskin. *Zhur. Tekh. Fiz.* 24, 797-810(1954).—Diffusion of water and of various org. vapors in polymers of methyl acrylate (I), methyl methacrylate (II), ethyl methacrylate (III), butyl methacrylate (IV), styrene (V), and vinyl acetate (VI) was measured by the sorption method at high temps. This method allows detn. of the coeff. of diffusion having an order of magnitude as low as 10^{-9} sq. cm./sec. Diffusion coeff. (D) was calcd. from the derived equation: $D = -a^2 \Delta \ln (N_\infty - N)/\pi^2 \Delta t$, where a = thickness of the polymer film, N_∞ = wt. of the swelled film at equil., N = wt. of the film after time t. Applicability of this equation is expressed as $\exp(8\pi^2 Dt/a^2) >> 1$. Measurements of D revealed that an increase in the molar vol. sharply decreases the diffusion rate. E.g., a 5-fold increase in molar vol. (H_2O vs. CCl_4) decreases the rate of diffusion in VI 8,000 times. No correlation was found between the rate of diffusion and the mol. wt., heat of evapn., and b.p. of the diluent or the energy of activation. In the case of every polymer studied a linear relation between the temp. coeff. of diffusion (E) and molar vol. (V) of the diluent could be expressed above the glass temp. (T_g) by the equation $E = E_0(1 + \alpha V)$. Here E_0 and α are consts. characteristic for each polymer and independent of the diluent. The temp. dependence of D above and below the 2nd-order transition obeys the empirical equation $D = D_0 e^{-E/RT}$. In the interval of temps. T_1–T_2, chosen in such a manner that $T_2 > T_g > T_1$, the relation of $\ln D$ vs. $1/T$ gives two straight lines that cross at T_g. Consts. D_0 and E_0 change at the transition point T_g, so that for $T < T_g$ they are in all cases smaller than for $T > T_g$. The temp. of the 2nd-order transition for I was 8°; II, 82°; III, 42°; IV, 10°; V, 82°; and VI, 30°.

A. P. Kotloby

RYSKIN, G.Ya.

Activation energy and temperature dependence of diffusion in polymers. (MLRA 8:5)
Zhur. tekh. fiz. 25 no.3:458-465 Mr '55.
(Polymers and polymerization) (Diffusion)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R001446510006-4"

FD-563

RYSKIN, G. Ya.

USSR/Physics - Polymer diffusion

Card 1/1 : Pub. 153 - 3/28

Author : Zhurkov, S.N., and Ryskin, G. Ya.

Title : Investigation of diffusion in polymers

Periodical : Zhur. tekh. fiz. 24, 797-810, May 1954

Abstract : Presents a mathematical theory of the temperature dependence of the diffusion velocity in polymers of water vapor and many organic liquid vapors over a wide temperature range. Briefly describes the experimental set-up.

Institution : --

Submitted : December 2, 1953

RYSKIN, M.

On the asbestos market. Vnesh. torg. 27 no.8:18-22 '57.(MLRA 10:9)
(Asbestos)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R001446510006-4"

КАТАЛИТИЧЕСКАЯ ИЗОМЕРИЗАЦИЯ ПАРАФИНОВЫХ УГЛЕВОДОРОДОВ

Г. Н. [illegible], [illegible], Н. Р. [illegible], Н. Н. [illegible]

VIII Mendeleyev Congress for General and Applied Chemistry in Section of Chemistry and Chemical Technology of Fuels, publ. by Acad. Sci. USSR, Moscow 1959

abstracts of reports scheduled to be presented at above mentioned congress, Moscow, 15 March 1959.

S/138/61/000/004/002/006
A051/A129

AUTHORS: Nemtsov, M.S., Ryskin, M.I.

TITLE: Disproportionation of colophony in stationary catalysts for producing emulsifiers used in the production of butadiene-styrene rubbers

PERIODICAL: Kauchuk i rezina, no. 4, 1961, 7-15

TEXT: This is a continuation of the work published in Ref. 1, M.S. Nemtsov, F.S. Shenderovich, Kauchuk i rezina, no. 2, 1961, 4. In 1959 the possibilities were studied for creating a continuous process of disproportionation of colophony with a stationary catalyst, almost excluding a catalyst suspension in the produced colophony. The major obstacle for the commercial use of this process was the gradual poisoning of the catalyst. The reactors of the model set-up (capacity 1 and 10 l) were hollow tubes. In testing the nickel catalyst the first laboratory tests showed the possibility of achieving a continuous process over a period of 500 hours at 225-230°C. The first experiments on the effect [illegible] in the catalyst showed that the duration of the

regenerating catalyst action depends largely on the quantity of the palladium. When using a catalyst made of palladium applied on granulated large-porous activated БАУ-3 (BAU) carbon (2.3%) favorable process indexes were maintained. It was concluded that the duration of the catalyst activity increases when the initial colophony is purified of any catalytic "poisons". The effectiveness of the action of the palladium catalyst depends on the size of its grains. Recuperated activated АР-3 (AR) carbon was used as the carrier instead of BAU-3. The relationship between the depth of transformation of abietic acid to the rate of the colophony supply and temperature was established in order to determine the kinetic laws of the disproportionation process (Fig. 6). The thermal effect of the process was also investigated. Experimental data showed that in all cases the temperature inside the catalyst was higher than in the aluminum block of the reactor, i.e. during the entire time of the catalyst action within the temperature range from 200 to 250°C the process remained exothermic. In selecting a technology and apparatus for the disproportionation process of colophony, the following factors and characteristics must be taken into account: 1) the catalyst gradually loses its activity and must be periodically replaced by a fresh one; 2)

in order to maintain the necessary depth of transformation and the given output of the apparatus of continuous action of the process, the temperature conditions of the process should change with the time; 3) the positive thermal effect of the reaction calls for a regenerating heat-remover. The principle diagram of the set-up is given in Fig. 9. This scheme is thought to be typical. The quality of the disproportionated colophony as an emulsifier for the production of butadiene-styrene rubber was tested. It was found that the suspended dust-like particles of the catalyst, such as the nickel or palladium particles are present only in the first samples of colophony, rinsing the surface of the freshly-suspended catalyst grains. After 0.5-1.0 hrs of the catalyst action, the yielded product is almost completely devoid of any suspended particles. Various samples obtained during the process of "cold" copolymerization of butadiene and styrene according to the trilon-rongalite composition were tested according to the ampoule method, in order to establish the effect on the colophony emulsifiers' "activity" of the conditions of the process of colophony disproportionation. It was shown that the colophony obtained with a nickel catalyst, both directly as well as after fractionating, is much inferior in "activity" to the American preparation

"Dresinate - 214". The colophony disproportionated with the palladium catalyst after fractionation has about the same rate of polymerization as "Dresinate-214". Thus, the process of disproportionation with stationary palladium catalyst yields the production of effective colophony emulsifiers. There are 9 graphs, 1 diagram and 3 references: 1 Soviet-bloc and 2 non-Soviet-bloc.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut neftekhimicheskikh protsessov (All-Union Scientific-Research Institute of the Oil-Chemical Processes)

NEMTSOV, M.S.; RYSKIN, M.I.

Disproportionation of rosin on fixed bed catalysts for the purpose of obtaining emulsifying agents used in the manufacture of butadiene-styrene rubbers. Kauch. i rez. 20 no. 4:7-15 Ap '61. (MIRA 14:5)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut neftekhimicheskikh protsessov.

(Rosin) (Emulsifying agents) (Rubber, Synthetic)

S/081/61/000/011/033/040
B110/B201

AUTHORS: Levin, A. I., Ryskin, M. I.

TITLE: Production of standard fuels and individual hydrocarbons

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 11, 1961, 485, abstract 11M214 (11M214) (Tr. Vses. n.-i. in-t neftekhim. protsessov, 1960, vyp. 1, 129-146)

TEXT: Synthol, a mixture of hydrocarbons of the paraffin series, served as starting material for the production of n-heptane. It consists mainly of C_5-C_9 as well as of the accompanying unsaturated hydrocarbons (up to 40-43% in the low-boiling and up to 20% in the high-boiling fractions) with a possible content of the heptane-heptene fraction of about 20%, inclusive of 13.6% n-heptane. Synthol was subjected to gradual fractionation on a laboratory column with 25 plates and the reflux number 20. Most of the heptene-heptane fraction is contained in the fraction boiling between 96 and 98°C. Unsaturated hydrocarbons were purified by means of sulfuric acid or by hydrogenation of this fraction at 160°C, at a volume rate 0.15 per volume of catalyst (nickel on kieselguhr), and at an H_2

feeding rate of 8 l/hr. Under equal fractionation conditions the yield of standard heptane obtained by hydrogenation is 23-35% higher than on purification by sulfuric acid. The n-heptane samples so obtained display the following characteristics: d_4^{20} = 0.6831 - 0.6848; n_D^{20} = 1.38777 - - 1.38825, aniline point 70.0-70.1, boiling point 98.0-98.5, octane number 0. The purity of the product obtained was checked by taking a Raman spectrum. The yield of standard heptane is 35.6% of the capacity per working cycle. Standard and commercial isooctane (fuel S) were obtained from alkyl gasoline of Gur'yevskiy NPZ (Gur'yevsk NPZ) in two stages: a) separation of the 80-100°C fraction from the alkylate on the rectification units of the first stage, and b) separation of standard fuels from the 80-100°C fraction on the precision rectification units of the second stage. The 98.2-99.1°C fraction was taken as commercial and the 99.1-99.4°C fraction as standard isooctane. The total yield of standard fuels was 16.7% of the initial gasoline. Standard isooctane had d_4^{20} = 0.6919; n_D^{20} = 1.3917, boiling point = 99.2°C, octane number 100. Analogously, the following substances were separated from the corresponding

alkyl-gasoline fractions: isopentane, 2,3-dimethyl butane, and other hydrocarbons. A project of provisional industrial production conditions for standard n-heptane was suggested. The production of standard hydrocarbons was started on an experimental plant. Technical data concerning the planning of an industrial plant for standard fuels are given.
[Abstracter's note: Complete translation.]

RUDKOVSKIY, D.M.; RYSKIN, M.I.; TSELLINSKAYA, T.F.

Selection of carriers for cobalt in the process of oxo synthesis.
Trudy VNIINeftekhim no.2:59-66 '60. (MIRA 14:2)
(Oxo process) (Cobalt)

GORBATIKOV, Viktor Andreyevich; RYSKIN, Moisey Nisonovich; VRONSKIY, L.N., ved. red.

[Planning the overall automation of oil-field operations] Proektirovanie kompleksnoi avtomatizatsii neftianykh promyslov. Moskva, Nedra, 1965. 101 p. (MIRA 18:7)

RYSKIN, M.S., inzhener.

Warehouses for packed cargoes in river harbors. Mech. transp. 16 no.6:25-26 Je '57. (MLRA 10:8)
(Warehouses) (Cargo handling)

RYSKIN, Mark Veniaminovich; YERMACHKOVA, G.S., red.izd-va; TYSHKEVICH, Z.V., tekhn.red.

[Asbestos; market of capitalist countries] Asbest; rynok kapitalisticheskikh stran. Moskva, Vneshtorgizdat, 1960. 185 p. (MIRA 13:5)

(Asbestos)

RYSKIN, M.Ya.; TSVETKOV, I.T.; MITROFANOV, S.I., prof., rukovoditel' raboty; Prinimali uchastiye: BAKHTEYEV, N.Ye.; KOLOSOV, A.A.; SMOLYUK, L.P.

Combined filtration of fluxes and copper concentrate. TSvet. met. 36 no.12:76 D '63. (MIRA 17:2)

RYSKIN, N. V.

2783. RYSKIN, N. V. Rezervy Rosta Dokhodov Konopleseyushchikh Kolkhozov. (Na Primere Kolkhozov Dubenskogo Rayona, Mordov. ASSR). Khar'kov, 1954. 22s. 20sm. (M-vo Vyssh Obrazovaniya SSSR. Khar'k. Ordena Trud. Krasnogo Znameni S-kh In-t Im. V.V.Dokuchaeva). 100 ekz. Bespl.-(54-54927)

SO: Letopis' Zhurnal'nykh Statey, Vol. 42, Moskva, 1949.

"APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R001446510006-4"

RYSKIN, M.V.

2783. Rezervy Rosta dokhodov konoplese yushchikh kolkhozov. (Na Primere Kolkhozov Dubenskogo Rayona, Mordov. ASSR). Khar'kov, 1954, 22c 20cm.(M-vo vyssh. obrazovaniya SSSR. Khar'k. ordena Trud. Krasnogo Znameni S-KH. In-T im. V. V. Dokuchayeva) 100 zkz. Bespl. - (54-54927)

SO: Knizhnaya Letopis, Vol. 2, 1955

PREYSMAN, A.B.; RYSKIN, S.Ye.

Electric stimulation in late abortions. Zdrav.Turk. 3 no.2: 10-13 Mr-Ap '59. (MIRA 12:8)

1. Iz kafedry akusherstva i ginekologii (zav. - prof.A.B. Preysman) Turkmenskogo gosudarstvennogo instituta im. I.V. Stalina.

(ABORTION) (ELECTROTHERAPEUTICS)

S

Automatic Equipment for Electrolytic Descaling. S. E. Ryskin. (Vestnik Metallopromyshlennosti, 1940, No. 3, pp. 66–68). (In Russian). The process and equipment which the author describes are used in preference to sandblasting for the removal of scale from carburised parts at the Stalin Automobile Works. The process comprises the following operations: (1) Anodic degreasing in a solution of caustic soda and trisodium phosphate. The time taken is 10–15 min. with a current density of 5 amp. per sq. dm. at a temperature of 80–90° C. (2) Rinsing for 1 min. in water at 50° C. (3) Rinsing for 1 min. in cold water. (4) Cathodic descaling in a solution of sulphuric and hydrochloric acids containing sodium chloride with a current density of 7 amp. per sq. dm. at 6 V.; the time required is 10–15 min. at a temperature of 60–70° C. A number of lead anodes are used and the descaled surfaces are protected by a deposition of lead. (5) Rinsing for 1 min. in water at 50° C. (6) Rinsing for 1 min. in cold water. (7) The protective lead coating is removed by anodic treatment in alkaline solutions at a temperature of 50–60° C. in 8–10 min. (8) Rinsing for 1 min. in cold water. (9) Rinsing for 1 min. in water at 85–95° C.

The equipment is briefly described. Its output capacity amounts to 2600 sq. dm. per hr.