"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5

USSR /Chemical Technology. Chemical Products and Their Application I-14

Water treatment. Sewage water.

Abs Jour: Referat Zhur - Khimiya, No 9, 1957, 31724

B.O.D.$_5$ and O_2 concentration in I. Thereafter a certain d_o value is set and S is calculated in accordance with formula (2), assuming v = 0.2. The thus derived value of S is substituted in formula (1), and $Q/Q_o = x_1$ is calculated in accordance with this formula. The value of d which was taken is considered correct if x_1 is greater than x; if this is not so a lower value of d_o is set.

Card 3/3

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5

MORGENSHTERN, V.S., kand.tekhn.nauk; MAZING, L.A., kand.tekhn.nauk

Purification of waste waters from woodpulp and paper factories.
Zhur. VKHO 6 no.2:150-155 '61. (MIRA 14:3)
(Sewage—Purification)(Paper industry)

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5

MORGENSHTERN, V.S.; RAKOVETS, A.N., red.

[Biological purification of waste waters from the wood-pulp industry] Biologicheskaia ochistka stochnykh vod tselliuloznogo proizvodstva. Moskva, TSentr. in-t tekhn. informatsii i ekon. issledovanii po lesnoi, bumazhnoi i derevoobrabatyvaiushchei promyshl., 1962. 31 p. (MIRA 17:3)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut tsellyulozno-bumazhnoy promyshlennosti (for Morgenshtern).

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5

ZAMORUYEV, Boris Mikhaylovich; FLYATE, D.M., dots., kand. tekhn. nauk retsenzent; [illegible] V.S., dots., kand. tekhn. nauk retsenzent; FILONENKO, K.D., red.

[Water purification structures in woodpulp production; a textbook on a diploma Project for students of the Faculty of Chemistry and Technology] Vodochistnye sooruzheniia tsellyuloznobumazhnogo proizvodstva; posobie po diplomnomu proektirovaniiu dlia studentov khimiko-tekhnol[illegible]eskogo fakul'teta. Leningrad, Vses. zaochnyi lesotekhn. in-t, [illegible]. 83 p. (MIRA 18;3)

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5

KORGENSHTERN, V.S., kand. tekhn. nauk (Leningrad); KALITSYN, V.I. (Leningrad)

Calculating controlling spillways for the maintenance of constant speed in horizontal sand traps with rectilinear water flow. Vod. i san. tekh. no.2:6-8 F '65. (MIRA 18:4)

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5

MORGENSHTERN, V.S.; MAL'KOV, V.A.

Calculation method for waste water neutralizers. Khim. volok. no.6:51-54 '64. (MIRA 18:1)

1. Leningradskiy filial Vsesoyuznogo nauchno-issledovatel'skogo instituta iskusstvennogo volokna.

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5

MORGENSHTERN, V.S., red.; MAZING, L.A., red.; POSTNOVA, I.D., nauchn. red.

[Purification of waste waters] Ochistka stochnykh vod. Moskva, 1963. 56 p. (MIRA 17:5)

1. Moscow. TSentral'nyy nauchno-issledovatel'skiy institut informatsii i tekhniko-ekonomicheskikh issledovaniy po lesnoy, tsellyulozno-bumazhnoy, derevoobrabatyvayushchey promyshlennosti i lesnomu khozyaystvu.

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5

L 17992-66 EWT(m)/EWP(t) IJP(c) JD

ACC NR: AP6004533 SOURCE CODE: UR/0236/65/000/004/0015/0026

AUTHOR: Pilite, S. P. (Pilyte, S.); Morgenshtern, Ya. L. (Morgensternas, J.); Molchadskiy, A. M. (Molcadskis, A.); Vishomirskis, R. M. (Visomirskis, R.) 28 B

ORG: Institute of Chemistry and Chemical Engineering, Academy of Sciences Lithuanian SSR (Institut khimii i khimicheskoy tekhnologii Akademii nauk Litovskoy SSR)

TITLE: Study of electrodeposition of palladium from phosphate solutions

24.55 16 55,27

SOURCE: AN LitSSR. Trudy. Seriya B. Fiziko-matematicheskiye, khimicheskiye, geologicheskiye i tekhnicheskiye nauki, no. 4, 1965, 13-26

TOPIC TAGS: cathode polarization, palladium, electrodeposition

ABSTRACT: In order to elucidate the processes taking place during electrodeposition of palladium from phosphate solutions, the cathodic polarization of this metal was measured as a function of the composition, temperature, and rate of stirring of the electrolyte. The following electrolyte compositions were employed (in g/l): (a) Pd (as $PdCl_2$), 4.8; $Na_2HPO_4 \cdot 12H_2O$, 100; $(NH_4)_2HPO_4$, 20; NH_4Cl, 25; (b) Pd (as $(PdCl_2)$, 4.8; $Na_2HPO_4 \cdot 12H_2O$. 100; $(NH_4)_2HPO_4$, 20; C_6H_5COOH, 2.5. It was found that the cathodic polarization curves consist of four main branches. The metal deposi-

Card 1/2 2

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"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5

L 17992-66
ACC NR: AP6004533

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tion takes place on the second branch, which is separated from the steady state potential of the electrode by more than 0.4 v. Replacement of ammonium chloride of benzoic acid causes the cathodic polarization of palladium to increase. Using a temperature-kinetic method and a rotating disc cathode, the authors showed that the electrodeposition is associated with concentration and chemical polarization. The nature of polarization changes with the potential and solution composition. On the basis of the results, it is postulated that the substantial cathodic polarization in phosphate electrolytes is due to the passivation of the electrode surface during electrolysis. Orig. art. has: 8 figures, 1 table.

SUB CODE: 07/ 13/ SUBM DATE: 04May65/ ORIG REF: 012/ OTH REF: 004

Card 2/2

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5

L 36430-66 EWT(m)/EWP(e) WH

ACC NR: AP6015426 SOURCE CODE: UR/0051/66/020/005/0837/0841

AUTHOR: Morgenshtern, Z. L.; Neustruyev, V. V.

ORG: none

32
B

TITLE: Spectral distribution of the luminescence yield of ruby 15

SOURCE: Optika i spektroskopiya, v. 20, no. 5, 1966, 837-841

TOPIC TAGS: luminescence spectrum, ruby

ABSTRACT: The spectral distribution of the quantum luminescence yield of ruby was studied in the 157-560 nm region. Measurements in the 250-560 nm range were made by using a technique described earlier (Opt. i spektr. 14, 687, 1963), and in the 157-355 nm range a monochromator with a diffraction grating was used. In both of these regions, the crystal was placed inside a photometric sphere whose walls scattered the light of its luminescence; measurement of the wall brightness gave a value proportional to the total luminescence flux of the crystal independently of its shape. In the $\lambda < 210$ nm range of the absorption spectrum, a rapid increase of the absorption coefficient, due to chromium, was observed. In the same range, a luminescence excitation band with a quantum yield close to unity was noted. The emission spectrum during excitation in this band was the same as during excitation in longer-wavelength absorption bands and in R-lines. It is concluded that there exist two

Card 1/2 UDC: 535.371:553.824

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5

L 36430-66

ACC NR: AP6015426

mechanisms of excitation of ruby luminescence: in the first, involved in excitation in R-lines, B-lines, and the shortwave ultraviolet band ($\lambda < 210$ nm), the luminescence occurs without quantum losses; in the second, involved in the green, blue, and ultraviolet bands ($\lambda \sim 255$ nm), the quantum losses are greater the shorter the wavelength of the exciting light. Orig. art. has: 2 figures and 1 formula.

SUB CODE: 20/ SUBM DATE: 23Feb65/ ORIG REF: 005/ OTH REF: 005

Card 2/2

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5

MORGENSHTERN, Z. L.

CA

Luminescence of x-rayed rock salt. N. A. Brilliantov and Z. L. Morgenshtern. *J. Exptl. Theoret. Phys.* (U. S. S. R.) 8, 401-3(1938).—Luminescence data obtained by far ultraviolet and x-ray irradiation show that NaCl and KCl crystals contain many *F* centers the energies of activation and the stabilities of which depend on the heat treatment of the crystals. **Ultraviolet fluorescence in crystals of alkali halide salts with *F* and *U* centers.** N. N. Fedenev. *Ibid.* 404-9.—A new fluorescence band for NaCl, KCl, NaBr and KBr crystals irradiated by ultraviolet or x-rays is observed. Transitions take place from *F* to *U* levels via a zone II as well as from *F* to *U'* where $U' - U = 0.5\,e$. Nine figures and tables summarize the exptl. data. **Inner photoelectric effect in potassium iodide and sodium iodide during an irradiation by ultraviolet light.** V. P. Poddubnyi. *Ibid.* 410-11.—Nonactivated crystals of KI and NaI show inner photoelectric effects due to transitions from low to conductivity energy levels on irradiation by ultraviolet light of their own absorption spectra. Two figures give the current as a function of wave length. **Spectral distribution of photoelectric current in crystals of alkali halide salts with *U* centers.** *Ibid.* 412-16.—The spectral distribution of direct and depolarized current arising from ultraviolet irradiation in NaCl, NaBr, KCl and KI crystals with *U* centers is shown by 12 graphs. The *U*-center electrons participate in the photoelec. current and are attracted by the *F*, *U* and *U'* centers. F. H. Rathmann

METALLURGICAL LITERATURE CLASSIFICATION

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"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5

MORGENSTERN, W. L.

MORGENSHTERN, V. L.

SA

A53

535.372 1511

Phosphors sensitive to "red" light. ANTONOV-ROMANOVSKY, V. V., LEVSCHIN, W. L., MORGENSTERN, Z. I. AND TRAPEZNIKOVA, Z. A. C.R. ACAD. SCI. URSS, 54 (No. 1) 19-22 (1946).—Irradiation of [illegible] phosphors by "red" light in [illegible] accelerates the expenditure of accumulated light energy and gives rise to a flash [illegible] properties of the new phosphors producing a [illegible] [illegible]. The phosphorescence and flash spectra [illegible] earth sulphides with 2 activators, Sm and Ce, or Sm and Fe, are practically the same, presenting broad diffuse bands. Phosphors with or without Sm [illegible] type of spectrum, but without Sm the phosphorescence is sharply increased and the flash is insignificant. Curves are drawn showing the relative energy output in the flash of different alkaline-earth phosphors with Sm and Ce, for varying wavelength of the light. These phosphors include CaS, SrS in the ratios 1 : 1 and 1 : 2.

L. S. O.

10

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"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5

~~MORGENSTERN, S. L.~~

MORGENSHTERN, Z.L.

SA

A3.3

1

535.371 2508

Light sum of flash and phosphorescence in CaS . SrS + Ce.Sm phosphors. MORGENSTERN, Z. L. C.R. Acad. Sci. URSS, 54 (No. 9) 783-5 (1946).—After excitation of CaS . SrS . CeSm by ultra-violet the light energy stored at room temperature may be released by infra-red or by heating. The thermal light sum is only about $\frac{1}{3}$ of the infra-red light sum, and even if much of the stored energy (up to $\frac{1}{3}$) is first released by infra-red, the same ratio holds between residual infra-red sum and thermal sum.

S. T. B.

8

2

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"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5

MORGENSHTERN, Z. I. PA 30T44

USSR/Medicine - Gangrene Feb 1947

Medicine - Gangrene, Gas

"Materials on Pathologic Anatomy and the Pathology of Anaerobic Gangrene," Z. I. Morgenshtern, 9 pp

"Arkhiv Patologii" Vol IX, No 1

Anaerobic gangrene is characterized by three chief signs: Gangrene, inflammation and formation of gas. These three signs appear in a variety of combinations and intensity. The author describes the observations which were made on gangrene during World War II, and reports some of the findings. He is attached to the Chair of Pathologic Anatomy (Deputy: Prof Z. I. Morgenshtern) of the Dnepropetrovsk Medical Institute.

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APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5

MORGENSHTERN, Z. L.
CA

3

Accumulation of light sum in phosphors sensitive to infrared. Z. L. Morgenshtern. *Doklady Akad. Nauk S.S.S.R.* 56, 783-6(1947); cf. preceding abstr.—The CaS-SrS + Ce,Sm phosphors show a rather rapid rise of L_1 with increase of intensity of the excitation source (Hg lamp with filter), then approaching a limiting value of L_1 apparently caused by complete ionization of all centers of emission. The limiting value is a function only of the frequency of the excitation source (max. reached at 302 ma). The temp. effects on emission are discussed. G. M. Konolapoff

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"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5

MORGENSHTERN, Z. L.

Jan/Feb 49

USSR/Physics
Phosphors
Luminescene

"The Flash Mechanism in SrS Phosphors as Effected by Rare-Earth Activators, and the Interactivity of Activators," V. V. Antonov-Romanskiy, V. L. Levshin, Z. L. Morgenshtern, Z. A. Trapeznikova, Phys Inst imeni P. N. Lebedev, Acad Sci USSR, 16 pp

"Iz Ak Nauk SSSR, Ser Fiz" Vol XIII, No 1

States that basic result of the study is that, in phosphors with two rare-earth activators, these activators situate themselves in systematic and orderly manner, thus forming a complex center of luminescende due to certain chemical forces. Bases this conclusion on three independent series of investigations with single-activated and double-activated phosphors, i. e., studies of temperature radiation of excited phosphors, luminescene spectra, and spectral sensitivity of the flash.

PA 36/49T89

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5

MORGENSHTEYN, Z. L.

PA 174776

USSR/Physics - New Techniques 21 Sep 50
Photography, Infrared
Phosphor

"Application of Flash Phosphors to Photography in the Infrared Region of the Spectrum," Z. L. Morgenshteyn

"Dok Ak Nauk SSSR" Vol LXXIV, No 3, pp 493-495

Discusses employment of flashing alkali-earth phosphors with 2 rare-earth activators Ce, Sm, prepd in Phys Inst, Acad Sci USSR, possessing

174776

USSR/Physics - New Techniques 21 Sep 50
(Contd)

great sensitivity to infrared rays. Photographs of mercury spectrum up to 1.53 microns obtained. Submitted 14 Jul 50 by Acad S. I. Vavilov.

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"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5

CA

MORGENSHTERN, Z.L.

3

Mechanism of the luminescence of diamonds. Z. L. Morgenshtern (P.N. Lebedev Phys. Inst. Acad. Sci. U.S.S.R., Moscow). *Zhur. Eksptl. Teoret. Fiz.* 21, 230-5 (1951).—Different samples of diamond all showed the fluorescence line 415 mμ and the accompanying bands; some showed also the 503-mμ line and less-marked accompanying bands. Diamonds with a yellow tinge absorb 415 mμ, but its presence is demonstrated by the accompanying bands. In one sample the 415-mμ system was absent. This diamond showed an afterglow sufficiently bright and long for the data of the decay law which proved to be hyperbolic $I = (a + bt)^{-1}$, with a and b depending on the exciting intensity E. For this particular diamond, the initial intensities I_0 of the afterglow in instantaneous excitation, by extrapolation in the coordinate system $(1/\sqrt{I}, t)$, were close to proportional to E^2, indicating nearly a pure recombination nature of the phosphorescence; however, this refers only to the particular diamond with an exceptional fluorescence spectrum, and probably with an impurity mechanism of luminescence. Diamonds with the typical fluorescence spectrum decay not hyperbolically, but along a curve resulting from 2 exponentials. The initial I_0 is much more nearly proportional to E than to E^2. A metastable character of the emission thus appears more likely in typical cases. N. T.

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"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5

MOR[illegible]SHTERN, Z. I.

USSR.

[illegible] The dependence of some luminescent properties of the [illegible] and [illegible] Sm on the wavelength of the exciting light. Z. I. Morgenstern, Zh. Eksper. Teor. Fiz. 25, No. [illegible] Russian.

A study of the dependence of the limiting quantity [illegible] the [illegible] of [illegible] light. The limit comes about because of re-emission and and by the irradiation itself. A small correction for the non-uniform [illegible] of the [illegible] 0.1-0.01 mm sample [illegible] was applied. For [illegible] Sm there [illegible] and [illegible] for [illegible] Sm [illegible] The significance of this for the mechanism of re-emission is discussed. The spectrum of light stored in [illegible] Sm under [illegible] and re-emitted [illegible] light was also photo[illegible]

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"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5

USSR/Physics - Crystallography

Card 1/1 Pub. 22 - 7/56

Authors: Belyaev, L. M.; Galanin, M. D.; Morgenshtern, Z. L.; and Chizhikova, Z. A.

Title: Dependence of the amount of γ-photoluminescence of KJ-Tl crystals on the concentration of thallium

Periodical: Dok. AN SSSR 99/5, 691-694, Dec 11, 1954

Abstract: Experimental studies of luminescence of monocrystals of KJ-Tl, activated either by γ-rays or photoexcitations, are described. The experiments were intended to establish the dependence of the amount of luminescence on the concentration of the activator (thallium). The KJ-Tl monocrystals had been grown out of potassium iodide then thallium was added in various proportions. Results are presented in the form of diagram-curves. Three USSR references (1935-1953). Table; graphs.

Institutions: The Physical Institute im. P. N. Lebedev of the Acad. of Scs. of the USSR, The Institute of Crystallography of the Acad. of Scs. of the USSR

Presented by: Academician V. A. Shubnikov, July 15, 1954

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5

MORGENSHTERN, Z. L.

Category : USSR/Optics - Physical optics K-5

Abs Jour : Ref Zhur - Fizika, No 1, 1957, No 2365

Author : Morgenshtern, Z.L.
Inst : Physics Institute, Academy of Sciences USSR
Title : Measurement of Absolute Quantum Yield of Photoluminescence of Alkali-Halide Crystals

Orig Pub : Zh. eksperim. i teor. fiziki, 1955, 29, No 6, 903-904

Abstract : The absolute quantum yield η of the luminescence of KCl-Tl, KI-Tl, and NaI-Tl crystals was measured when excited in the activator absorption bands. The number of luminescence quanta and the number of absorbed quanta were measured with the aid of a lumogen, luminescing under the influence of either radiation and having a constant η in the measured region (240-500 mμ). The following values of η were obtained: KCl-Tl 246 mμ, 0.80; KI-Tl 245 mμ, 0.70--0.93 (different crystals); 285 mμ, 0.74--0.77; NaI-Tl 260 mμ, 0.40; 293 mμ, 0.61. The large fluctuations in η for different KI-Tl crystals excited at 245 mμ are ascribed to a different degree of overlap of the short-wave absorption band of Tl by the edges of the intrinsic (inactive) lattice absorption (Ref. Zhur. Fiz 1956, 23861). The same method was used to determine the following values of η at 250 mμ: tolane 0.57, dibenzyl 0.44, stilbene 0.43, naphthalene 0.18.

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APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5

NORGENSHTERN, Z.

[illegible] of the absolute quantum yield of [illegible] [illegible] crystals. Z. L. Norgenshtern [illegible] (English translation); Zhur. Eksp. i Teor. Fiz. 29, [illegible] (1955).—By means of a photometric sphere the quantum yield of several [illegible] crystals was [illegible] for [illegible] length over [illegible] A. [illegible] [illegible] 0.90, [illegible] 0.90, [illegible] 0.40 [illegible] [illegible] 0.67, [illegible] 0.44, [illegible] 0.4[illegible] and [illegible] 0.18.

[illegible]

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"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5

MORGENSHTERN, Z. L.

K-5

Category : USSR/Optics - Physical optics

Abs Jour : Ref Zhur - Fizika, No 1, 1957, No 2363

Author : Belyayev, L.M., Galanin, M.D., Morgenshtern, Z.L., Chizhikova, Z.A.

Inst : Phys. Inst. Acad. of Sciences USSR; Inst. of Crystallography Acad. of Sciences USSR

Title : Dependence of the Yield of Gamma and Photoluminescence of NaI-Tl Crystals on the Thallium Concentration.

Orig Pub : Dokl. AN SSSR, 1955, 105, No 1, 57-60

Abstract : The relative luminescence yields φ of NaF-Tl crystals excited by gamma rays from Co^{60} and photo-excited at 289 and 254 mμ were measured as functions of the concentration c of Tl, which was determined polarographically. It is shown that in the long-wave absorption band of Tl the index of light absorption is proportional to c, so that for low thallium concentration the value of c could be determined from the absorption. In the case of the 289 mμ excitation, i.e., in the first (long-wave) absorption band of Tl, φ is independent of c up to values of c amounting to 10^{-3}M. In the case of the 254 mμ excitation, φ increases up to $c \sim 2 \times 10^{-4}$M and becomes independent of c beyond that. An analogous dependence is observed also in gamma excitation. The half value of the limiting φ of gamma luminescence is attained at $c = 5.9 \times 10^{-5}$M. The scintillation brightness is greater in NaI-Tl than in KI-Tl, but the summary glow

TRANS D 417421 p. 15

Card : 1/2

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"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5

Category : USSR/Optics - Physical optics

K-5

Abs Jour : Ref Zhur - Fizika, No 1, 1957, No 2363

of NaI-Tl, for sufficiently large values of c, exceeds the summary glow of NaI-Tl, and this is explained by the considerably greater fraction of phosphorescence in the glow of KI-Tl.

Card : 2/2

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"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5

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000

2944

[illegible]

[illegible]

THALLIUM [illegible]

[illegible]

Nov. 11. [illegible]

Data on the effects of the light (residual wave length on the luminescence [illegible] were [illegible] to the data of absorption of the activated and non-activated KI-Tl, NaI-Tl and [illegible]

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5

MORGENSHTERN, Z.L.

USSR / Optics K

Abs Jour: Referat Zhur-Fizika, 1957, No 4, 10376

Author : Morgenshtern, Z. L., Shchukin, I.P.
Inst : Not Given
Title : Luminescence of Color Centers in CsI-Tl Crystals.

Orig Pub: Optika i spektroskopiya, 1956, 1, No 2, 190-197

Abstract: CsI-Tl crystals (3.35×10^{-5} -- 1.02×10^{-3} g/g) were grown by the Kiropoulos method. In the absorption spectrum, along with the activator bands shorter than 240 millimicrons, there was observed an additional absorption edge, which extends to the visible region. This absorption increases with concentration of Tl, first linearly, and then with a tendency to saturation. The excitation and the activator bands causes fluorescence with $\tau = 10^{-6}$ seconds (band with two peaks at 540 and 580 millimicrons) and very weak afterglow. The excitation in the long-wave edge of the additional absorption gives an insignificant fluorescence, but an intense fluorescence with $\lambda_{max} = 580$ milli-

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"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5

USSR / Optics K

Abs Jour: Referat Zhur-Fizika, 1957, No 4, 10376

microns, which increases with length of excitation. Simultaneously, C_sI-Tl becomes colored: new absorption bands appear at 385, 460, 520, and 840 millimicrons. Their intensity increases with the concentration of the Tl. During excitation one observes in the 385 and 460 millimicron bands a red fluorescence of the color centers with λ_{max} = 600 millimicrons. Upon heating, the crystals become discolored. Two peaks of thermoluminescence are observed at 63 and 125°. The peak at 63° corresponds to the discoloring of the band at 840 millimicrons and the second to that of the bands at 385 and 460 millimicrons. The energies of the thermal ionization of the capture centers are calculated: $\mathcal{E}_T$ = 0.75 and 0.95 ev. Polarization of the luminescence corresponds to the orientation of the glow centers along the fourth-order axes. It is concluded that the deep capture levels (bands at 385 and 460 millimicrons) belong to the paired neighboring ions of Tl^+. Bibliography, 16 titles.

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MORGENSHTERN, Z.L.

51-6-23/26

AUTHORS: Zhvanko, Yu. N., Morgenshtern, Z. L. and Shamovskiy, L. M.

TITLE: Study of the properties of phosphors KI-In and KI-Ga. (Issledovaniye svoystv fosforov KJ-In i KJ-Ga.)

PERIODICAL: Optika i Spektroskopiya, 1957, Vol.II, Nr.6, pp. 821-823. (USSR)

ABSTRACT: This paper deals with properties of KI phosphors activated with analogues of Tl. Single crystals of KI activated with various amounts of Tl, In and Ga were prepared. All samples were prepared under the same conditions in sealed quartz ampoules by the method described in Ref.3. Activators were introduced in metallic form. To avoid oxidation the crystals were prepared in an atmosphere of hydrogen. When excited with a mercury lamp KI-In emits yellow-green and KI-Ga orange light. The luminescence spectra of KI-Tl, KI-In and KI-Ga are shown in Fig.1. The absorption spectra of the three phosphors are shown in Fig.2.

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"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5

Morgenshtern, Z. L.

SUBJECT: USSR/Luminescence 48-4-25/48

AUTHOR: Morgenshtern Z. L.

TITLE: Spectral Distribution of Yield and the Absolute Yield of Photoluminescence of Alkali Iodides Activated by Tallium (Spektral'noye raspredeleniye vykhoda i absolyutnyy vykhod fotolyuminestsentsii shchelochnykh iodidov aktivirovannykh talliyem)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, 1957, Vol 21, #4, p 544 (USSR)

ABSTRACT: The spectral dependence of luminescence yield was measured for KJ-Tl, NaJ-Tl and CsJ-Tl phosphors, and measurements of the absolute quantum yield of alkali-haloid phosphor photoluminescence were carried out.

The absolute quantum yield of KJ-Tl at the excitation in two absorption bands of the activator was practically the same and equal to 0.75 to 0.80. Its value for NaJ-Tl at the excitation in the long wavelength absorption band of the activator was 0.61, and in the short wavelength band 0.40. The yield

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"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5

48-4-25/48

TITLE: Spectral Distribution of Yield and the Absolute Yield of Photoluminescence of Alkali Iodides Activated by Tallium (Spektral'noye raspredeleniye vykhoda i absolyutnyy vykhod fotolyuminestsentsii shchelochnykh iodidov aktivirovannykh talliyem)

for CsJ-Tl at the excitation in the absorption bands of the activator was 0.84.
The relative spectral distribution of the quantum yield was measured by comparison with a luminophore having the constant quantum yield in the region measured. It was discovered that: the yield is constant within the range of activator absorption bands, the yield curve is shifted relative to the absorption curve toward longer wavelengths, and the yield is sharply reduced near the first absorption maximum of the basic substance.
No references are cited.

INSTITUTION: Physical Institute im. Lebedev of the USSR Academy of Sciences

PRESENTED BY:

SUBMITTED: No date indicated

AVAILABLE: At the Library of Congress.

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APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5

Morgenshtern, Z.L.

SUBJECT: USSR/Luminescence 48-4-28/48

AUTHORS: Belyayev L. M., Galanin M.D., Morgenshtern Z.L. and Chishikova Z.A.

TITLE: Dependence of Gamma- and Photoluminescence Yield of Alkali Iodides Activated by Tallium on the Concentration of the Activator (Zavisimost' vykhoda gamma- i fotolyuminestsentsii shchelochnykh iodidov, aktivirovannykh talliyem ot kontsentratsii aktivatora)

PERIODICAL: Izvestiya Akdademii Nauk SSSR, Seriya Fizicheskaya, 1957, Vol 21, #4, p 548 (USSR)

ABSTRACT: This investigation was aimed at clarification of the problem, what is the concentration of an activator, for which the energy transfer from the lattice to the activator proceeds with a sufficient effectiveness.

Investigations were carried out with single crystals of NaJ, KJ and CsJ activated by tallium, whose concentration was determined by the polarographic method. The measurements of relative yield due to excitation by light have shown that the yield does not depend on concentration, that is, no concentration quenching was observed within the limits investigated (up to

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"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5

Morgenshtern, Z.L.

48-4-42/48

SUBJECT: USSR/Luminescence

AUTHORS: Morgenshtern Z.L. and Shchukin I.P.

TITLE: Luminescence of Color Centers in CsJ-Tl Crystals (Lyuminestsentsiya tsentrov okraski v kristallakh CsJ-Tl)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, 1957, Vol 21, #4, pp 593-594 (USSR)

ABSTRACT: It was discovered that in CsJ crystals with relatively high concentrations of tallium, the excitation acts differently in the region of activator absorption bands (λ = 300 mμ) and in the long wavelength edge region of activator absorption (λ = 365 mμ). The first induces yellow-green fluorescence (2 near bands with λ_{max} = 540 mμ) with $\tau = 1 \times 10^{-6}$ sec, the second induces slight fluorescence and intensive yellow phosphorescence (λ_m = 580 mμ), which gradually increases with excitation duration.

The absorption spectrum of the crystal changes with phosphorescence rise: additional absorption bands arise, the crystal acquires color. The action of X- and gamma-rays gives also

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"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5

48-4-42/48

TITLE: Luminescence of Color Centers in CsJ-Tl Crystals (Lyuminestsentsiya tsentrov okraski v kristallakh CsJ-Tl)

rise to color. Additional absorption bands have maxima at 385; 460; 520 and 840 mμ. The intensity of all bands rises with tallium concentration increase both at photo- and roentgen coloring.

When colored crystals are heated, color centers are destructed, additional absorption disappears, and crystals are decolorized. During this process, thermoluminescence with 2 maxima, at 65 and 125°C, is observed. The depth of corresponding capture levels amounts to 0.74 and 0.95 ev.

The following conclusions are drawn from the experiments performed: it is assumed that there are 2 kinds of centers in non-colored CsJ-Tl crystals. Centers of the first kind are tallium ions replacing a regular Cs^{+}-ion in the lattice, and centers of the second kind are tallium ions located alongside with cation vacancies.
No references are given.

The report was followed by a short discussion.

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"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5

SUBJECT: USSR/Luminescence 48-5-44/56

AUTHORS: Zhvanko Yu.N., Morgenshtern Z.L. and Shamovskiy L.M.

TITLE: Investigation of the Properties of KJ-In and KJ-Ga Phosphors (Issledovaniye svoystv fosforov KJ-In i KJ-Ga)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, 1957, Vol 21, #5, p 752 (USSR)

ABSTRACT: Phosphors based on potassium iodide and activated by In and Ga were produced and investigated.

The KJ-In crystals show yellow-green luminescence ($\lambda_{max} \sim 50$ mμ) and KJ-Ga crystals show orange luminescence ($\lambda_{max} \sim 600$ mμ) at photoexcitation.

The introduction of In or Ga, as well as Tl, leads to the arising of characteristic activator bands on the long wavelength edge of the internal absorption of a basic substance. In the KJ-In phosphor are observed bands with $\lambda_{max} \sim 230$ mμ and 262 mμ and one weak band with $\lambda_{max} \sim 510$ mμ. In the absorption spectrum of KJ-Ga two intensive bands with $\lambda_{max} \sim 230$ mμ

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"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5

48-5-44/56

TITLE: Investigation of the Properties of KJ-In and KJ-Ga Phosphors (Issledovaniye svoystv fosforov KJ-In i KJ-Ga)

and 248 to 249 mμ were discovered.

The quantum yield of KJ-In luminescence was found to be 0.97 and that of KJ-Ga was found to be 0.65 at the excitation by λ = 265 mμ.

Two Russian references are cited.

INSTITUTION: Physical Institute im.Lebedev of the USSR Academy of Sciences and All-Union Scientific Research Institute of Mineral Raw Materials.

PRESENTED BY:

SUBMITTED: No date indicated

AVAILABLE: At the Library of Congress

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"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5

MORGENSHTERN, Z. L.

51-4-1-19/26

AUTHORS: Dunina, A. A., Morgenshtern, Z. L. and Shamovskiy, L. M.

TITLE: Absorption and Luminescence Spectra of Indium-Activated Alkali-Halide Monocrystals. (Spektry pogloshcheniya i lyuminestsentsii shchelochno-galoidnykh monokristallov, aktivirovannykh indiyem.)

PERIODICAL: Optika i Spektroskopiya, 1958, Vol. IV, Nr. 1, pp. 105-109. (USSR)

ABSTRACT: Zhvanko, Morgenshtern and Shamovskiy (Ref.4) studied KI phosphors activated with thallium, indium and gallium, and showed that the absolute quantum yield in KI-In is very high (of the order of 0.95). The present communication reports investigation of the absorption, excitation and luminescence spectra of monocrystals of sodium, potassium, rubidium and caesium chlorides, bromides and iodides, all activated with indium. Monocrystals were produced from melt in sealed quartz ampoules (Ref.8). The activator was

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51-4-1-19/26

Absorption and Luminescence Spectra of Indium-Activated Alkali-Halide Monocrystals.

introduced in metallic form or as a univalent salt with the same anion as the base. The absorption spectra were measured on polished plates using a СФ-4 spectrophotometer. Below 220 mμ, measurements were made using a hydrogen lamp (supplied by I. A. Prager), a vacuum monochromator with mirrors and a fluorite prism. A photomultiplier ФЭУ-19 with a luminescent light convertor and an amplifier was used as the receiver. To measure absorption spectra the crystal was placed in front of the entrance slit of the monochromator. The excitation spectra were measured on a СФ-4 spectrophotometer, using a

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51-4-1-19/26

Absorption and Luminescence Spectra of Indium-Activated Alkali-Halide Monocrystals.

ФЭУ-19 photomultiplier and an amplifier. The emission spectra excited by light in the activator bands were measured on a УМ-2 monochromator with a ФЭУ-19 photomultiplier and an amplifier. When the emission spectrum was in the ultraviolet region measurements were also made using a Hilger quartz monochromator and ФЭУ-19. The absorption spectra for the monocrystals studied are shown in fig.1. The positions of the absorption maxima are given in the table on p.107. All spectra exhibit a long-wavelength absorption band (I) and a more intense short-wavelength band (II). For iodides a third (III) band is observed. Bands I and II are displaced towards long wavelengths on transition from chlorides to

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iodides. The absorption coefficient of the long-wavelength band increases with increase of the activator concentration somewhat faster than in the short-wavelength band. CsCl-In samples break up into small crystals in mechanical preparation. For this reason the absorption spectrum of CsCl-In was estimated from the spectral distribution of photo-excitation. The excitation spectra for all the phosphors studied are in general similar to the absorption spectra. By way of an example the excitation spectra of KCl-In, RbBr-In and CsI-In are given in Fig.2. The emission spectra are shown in Fig.3. The maximum of the emission band is displaced towards long wavelengths on

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transition from chlorides to iodides. The results obtained were compared with similar results for the same phosphors activated with thallium (Ref.2). In general, the results are similar for In and Tl activators. The absorption bands of inlium-activated phosphors occur at longer wavelengths than the absorption bands of thallium-activated phosphors. Furthermore, for indium-activated phosphors the authors found considerable splitting of the absorption bands even at room temperature, while for thallium-activated phosphors such splitting occurred only at low temperatures (Ref. 10). The authors thank M. D. Galanin for his interest, N. V. Kostin for help in measurements, and M. I. Gostev for help in preparation of phosphor monocrystals.

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51-4-1-19/26

Absorption and Luminescence Spectra of Indium-Activated Alkali-Halide Monocrystals.

There are 3 figures, 1 table and 10 references, of which 6 are Russian, 3 German and 1 English.

ASSOCIATION: Physics Institute imeni P. N. Lebedev, Academy of Sciences of the USSR; All-Union Institute of Mineral Raw Materials. (Fizicheskiy institut im. P. N. Lebedeva AN SSSR; Vsesoyuznyy institut mineral'nogo syr'ya.)

SUBMITTED: April 11, 1957.

AVAILABLE: Library of Congress.

1. Alkali halide crystals-Absorption 2. Alkali halide crystals-Luminescence spectra

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APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5

SOV/51-7-2-13/34

AUTHOR: Morgenshtern, Z.L.

TITLE: Luminescence of Non-Activated CsI Monocrystals (Svecheniye neaktivirovannykh monokristallov CsJ)

PERIODICAL: Optika i spektroskopiya, 1959, Vol 7, Nr 2, pp 231-235 (USSR)

ABSTRACT: Pure CsI monocrystals were prepared in L.M. Shamovskiy's laboratory. Their luminescence spectrum was in the form of a wide band with a maximum near 420 μ and a half-width of ~0.44 eV (Fig 1a). Similar luminescence was observed under the action of γ-rays from Co^{60} (Fig 1б). This non-activated luminescence band was also observed in the presence of Tl or In activator, but on increase of the activator concentration its intensity fell. On photo- and γ-excitation of CsI activated with small amounts of Tl ($\sim 10^{-6}$) or In ($< 10^{-5}$) an additional band was observed at 560-630 mμ (Figs 1в-е). A band at 240 mμ (0.23 eV hald-width), lying at the absorption edge of CsI, was used to excite the crystals; it produced both non-activated and activator emission. The latter was due to direct absorption by Tl and In centres. The absolute quantum yield plotted as a function of the exciting-light wavelength was found to be a narrow band (0.29 eV half-width) with a

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maximum at 242 mμ (Fig 2, curve 1). L. Bubnov (a student) measured the temperature dependence of the decay constants τ of non-activated CsI and of CsI with Tl; both were excited by means of a spark from which a quartz monochromator separated out the 240 mμ wavelength. The results are shown in Fig 4. Curve 1 in Fig 4 represents both the CsI emission and the short-wavelength component of CsI:Tl; at 20°C the decay constant was $\tau_1 = 0.55 \times 10^{-6}$sec. Curve 2 represents the long-wavelength component of the CsI:Tl emission; here $\tau_2 = 0.7 \times 10^{-6}$sec at 20°C. The spectral distributions of the constants τ_1 and τ_2 were also different. It is possible to explain the observed non-activated emission of CsI in two ways. Lattice defects may give rise to an absorption band lying on top of the fundamental absorption edge. Light absorbed by this band is then re-emitted as the non-activated luminescence in pure CsI or it is shared between the non-activated and activator components of luminescence in CsI:Tl or CsI:In. Alternately the two absorption bands of the CsI lattice itself, which are known to lie next to the fundamental edge (at ~219 and ~206 mμ) may be responsible. The first of these bands (at ~219 mμ) is

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non-active in emission but the second one (at ~206 mμ) may overlap the first producing emission reported here (the two bands are not resolved in the absorption coefficient dependence obtained by the author and shown as curve 3 in Fig 2). Acknowledgments are made to M.N. Alentsev and M.D. Galanin for their advice and to N.V. Kostina for her help in the experiments. There are 4 figures and 14 references, 5 of which are Soviet, 5 English, 2 German and 2 Swiss. Thanks is also given to L. M. Shamovskiy for the use of his laboratory, and to I. A. Prager who loaned an experimental model of a powerful hydrogen lamp.

SUBMITTED: October 18, 1958

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E201/E491

24.3500

AUTHOR: Morgenshtern, Z.L.

TITLE: Luminescence of Non-Activated CsI Crystals. II

PERIODICAL: Optika i spektroskopiya, 1960, Vol.8, No.5, pp.672-677

TEXT: This paper was first presented at the Conference on Physics of Alkali-Halide Crystals in Tartu (June, 1959).

Luminescence of non-activated and activated CsI crystals, excited with Co^{60} γ-rays, was investigated at room temperature and at the boiling point of liquid nitrogen. The following four types of crystals were employed: (1) a crystal grown from a solution of pure materials which were subjected to double recrystallization (crystal No.1); (2) a crystal grown by L.M.Soyfer from material which was initially subjected to double recrystallization and 8 zone melting runs (crystal No.2); (3) crystals grown by the usual Stockbarger method in sealed quartz ampoules in the laboratory of L.M.Shamovskiy (crystals No.3, 4, 5); (4) crystals grown in the laboratory of L.M.Shamovskiy and containing 10^{-6} Tl or 10^{-5} In (crystals No.6, 7). The spectra were recorded by means of a quartz spectrograph. In non-activated and activated crystals two

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Luminescence of Non-Activated CsI Crystals. II

bands were observed: an ultraviolet one (maximum at 319 to 343 mμ) and a dark blue one (maximum at 403 to 412 mμ). Introduction of an activator (crystals No.6 and 7) produced an activator band (maximum at 535 to 577 mμ); increase of the activator concentration gradually reduced to zero the ultraviolet and dark blue band intensities (all these results are illustrated in Fig.1 and a table on p.674). Studies of the temperature dependence of the luminescence yield of all these bands (Fig.2) and of thermo-luminescence curves (obtained by heating up to 300°K of γ-excited crystals, cf. Fig.3) showed that the three luminescence bands in CsI are related to three different types of centres. Nothing definite can be said about the centres responsible for ultraviolet luminescence. All one can say is that these centres are not vacancy-type defects since strong ultraviolet luminescence was observed in crystals grown from solution at room temperature, and such crystals have very few vacancies. The dark blue luminescence of CsI is similar to the blue band of ZnS (Ref.11) and it is related to the lattice vacancies. The authors reported also an effect observed on plastic deformation of non-activated

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E201/E491

Luminescence of Non-Activated CsI Crystals. II

CsI crystals. If such crystals are compressed then, in addition to dark blue luminescence, a yellow band appears similar in colour to the Tl band. This yellow band is obviously due to structural defects due to plastic deformation. The centres responsible for this yellow luminescence must be different from the vacancies producing the dark blue band since the latter is not intensified by plastic deformation. Acknowledgments are made to M.D.Galanin for his advice, to N.V.Kostina and N.N.Vasil'yeva for their help, and to L.M.Shamovskiy and L.M.Soyfer for supply of the crystals. There are 3 figures, 1 table and 11 references: 4 Soviet, 2 English, 2 Swiss and 3 mixed (Swiss and German, German and English, Soviet and English).

SUBMITTED: September 4, 1959

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"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5

S/051/60/009/005/016/019
E201/E191

AUTHORS: Vasil'yeva, N.N., and Morgenshtern, Z.L.

TITLE: Luminescence of Non-activated KI Crystals

PERIODICAL: Optika i spektroskopiya, 1960, Vol.9, No.5, pp 676-677

TEXT: The authors grew Tl-free KI crystals from solution. They studied luminescence of these crystals and of KI:Tl. Irradiation of KI with Co^{60} γ-rays at the temperature of liquid nitrogen produced a luminescence band (probably of exciton nature) at 370 mμ; its half-width was 0.48 eV and it decayed exponentially with the time constant of 0.9 μsec. This band (curve 1 in a figure on page 676) was observed in Tl-free KI and in KI:Tl crystals. Photoexcitation of pure KI had a maximum near 210 mμ at the temperature of liquid nitrogen (curve 2) overlapping an absorption band (curve 3). Acknowledgements are made to M.D. Galanin for his advice and measurements of the decay time constant, and to N.V. Kostina for her help in this work. There are 1 figure and 6 references: 2 Soviet, 2 English, 1 German and 1 mixed (Soviet and Swiss).

SUBMITTED: June 24, 1960

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KONSTANTINOVA-SHLEZINGER, M.A., red.; MORGENSHTERN, Z.L., red.;
AKHLAMOV, S.N., tekhn. red.; MURASHOVA, N.Ya., tekhn. red.

[Luminescence analysis] Liuminestsentnyi analiz. Moskva, Gos. izd-vo fiziko-matem. lit-ry, 1961. 399 p. (MIRA 15:2)
(Spectrum analysis) (Luminescence)

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B029/B067

9.6150 (also 1137, 1395)

AUTHORS: Vasil'yeva, N. N. and Morgenshtern, Z. L.

TITLE: Luminescence of non-activated alkali iodides

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, v. 25, no. 1, 1961, 47-50

TEXT: The present work has the following aims: 1) production of crystals without Tl impurities, 2) study of the interaction of bands by using In instead of Tl as an activator. The authors obtained such crystals from an aqueous solution of alkali-iodide without heavy metals. They had also crystals that had been grown from a melt by using Stokbarger's method, viz., without activator and with various Tl or In concentrations. (The authors thank L. M. Shamovskiy for having supplied the crystals). The authors studied the emission spectra of all these crystals at room temperature and at the temperature of liquid nitrogen in the case of excitation by γ-rays from Co^{60}. Results: 1) In the KI crystals grown from the solution, one ultraviolet emission band with $\lambda_m \sim 570$ mμ exists. 2) Crystals containing

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Luminescence of non-activated ...

high Tl concentrations show one emission band with λ_m = 406 mμ, which is due to the activator. 3) In crystals with low Tl concentrations, one band with $\lambda_m \sim 382$ mμ exists, which probably consists of a thallium and an ultraviolet band. 4) At low In concentrations, an ultraviolet band and also a band of longer wavelength due to the activator are observed. The intensity of the ultraviolet band decreases and that of the activator band increases with increasing In concentration. The ultraviolet band vanishes at higher In concentrations. Sometimes, intermediary emission bands appear in KI crystals. In general, three emission bands exist in KI and CsI crystals: an ultraviolet band related to the pure lattice, an intermediary band, and a long-wave band due to the activator. The long-wave bands occurring on the introduction of the activator are due to transitions inside the activator ion. According to the opinion of the authors, the long-wave emission band in CsI-Tl is characteristic of the Tl activator. The intermediary band in CsI may be attributed to structural defects of the vacancy type; the intermediary band in KI is probably of the same nature, but only few data are available on this subject.

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B029/B067

Luminescence of non-activated ...

The short-wave emission band in CsI and KI crystals, like the ultraviolet band previously detected, is probably caused by the emission of the pure lattice. Its excitation spectrum could be measured if only this emission band was present. In the range of shorter wavelength (λ = 185 mμ), corresponding to the band-to-band transition, the excitation curve decreases. Similar phenomena are observed in the case of CsI crystals. The KI ultraviolet band is attenuated exponentially at liquid nitrogen temperature with τ = 0.9 μsec. Therefore, the ultraviolet band seems to be due to exciton emission. Finally, the authors determined the concentration of the activator which is sufficient for a complete quenching of its glow. In the case of KI-In crystals they found a concentration of $0.87 \cdot 10^{-5}$ mole In/mole KI. The authors thank M. D. Galanin for her interest and for the measurements of τ, and N. V. Kostina for assistance. This is the reproduction of a lecture read at the Ninth Conference on Luminescence (Crystal Phosphors), Kiyev, June 20-25, 1960. There are 2 figures and 12 references: 6 Soviet-bloc and 4 non-Soviet-bloc.

Card 3/3

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5

33641

S/051/62/012/001/009/020
E202/E492

24.3500 (1137,1138)

AUTHORS: Vasil'yeva, N.N., Morgenshtern, Z.L.

TITLE: Gamma and photo-luminescence of alkali iodides

PERIODICAL: Optika i spektroskiya, v.12, no. 1, 1962, 86-91

TEXT: The authors studied the emission spectra of KI crystals excited by the gamma radiation of Co^{60}. It was found that the spectra of the non-activated KI crystals had only one UV emission band ($\lambda_m \approx 370$ mμ); a band of longer wavelength ($\lambda_m \approx 406$ mμ) was observed only in the presence of a high concentration of Tl activator. The intermediate corresponding to the blue luminescence band of CsI, was not observed generally, but was present at liquid nitrogen temperature. The study of this band was found to be difficult due to heavy overlapping with the main band; however, the maximum was found to be in the region of 400 mμ. The emission bands of the non-activated alkali iodides excited by the gamma-radiation at the liquid nitrogen temperature were described summarily (Table 1). The authors have also measured the excitation spectrum of the CsI and KI crystals with only one UV emission band and found that the excitation bands of

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33641

Gamma and photo-luminescence ... S/051/62/012/001/009/020
E202/E492

the UV light correspond to the exciton bands of absorption in the crystal. It was concluded that the UV band is due to an exciton radiation. The fact that this radiation had the highest intensity in crystals with the lowest number of faults led the authors to believe that they were dealing with a free exciton radiation. The problem of the decay of the exciton radiation with the increase in the concentration of the structural and additive defects was also discussed. Since the growth of the activator concentration reduces the output of the radiation in the exciton band to zero, while simultaneously increasing the luminescence of the activator, there could only be two alternatives, viz. (1) excitation of the activator and formation of the excitons are two independent (and rivaling) processes and (2) excitation of the activator is achieved with the help of the excitons. The authors' work with the CsI-Tl at low temperatures indicated that the first alternative was correct. Acknowledgments are expressed to M.D.Galanin for his interest and to N.V.Kostina for assistance in the work. There are 3 figures, 2 tables and 14 references: 5 Soviet-bloc, 1 Russian translation from non-Soviet-bloc work and 8 non-Soviet-bloc. The references to English language

Card 2/3

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5

33641

Gamma and photo-luminescence ... S/051/62/012/001/009/020
E202/E492

references read as follows: Ref.4: W. Van-Sciner. Nucleonics, v.14, 1956, 50; I.R.E.Trans. Nucl. Sci., NS-3, 1956, 39; Ref.8: K.J. Teegarden. Phys. Rev., v.105, 1957, 1222; Ref.10: W.Martienssen. J. Phys. Chem. Solids, v.2, 1957, 257; Ref.14: K.Teegarden, R.Weeks. J. Phys. Chem. Solids, v.10, 1959, 211.

SUBMITTED: January 14, 1961

Card 3/3

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5

ACCESSION NR: AR4043998 S/0058/64/000/006/D074/D074

SOURCE: Ref. zh. Fizika, Abs. 6D558

AUTHOR: Vasil'yeva, N. N.; Morgenshtern, Z. L.

TITLE: γ- Luminescence of alkali iodides

CITED SOURCE: Sb. Stsintillyatory* i stsintillyats. materialy*. Khar'kov, Khar'kovsk. un-t, 1963, 114-115

TOPIC TAGS: gamma luminescence, alkali iodide

TRANSLATION: Investigates the properties of exciton radiation in a single crystal of CsI-Tl at low temperatures. It is shown that with increasing concentration of activator the radiation yield in the exciton band drops to zero. This is connected with the fact that activator excitation is a competitive process with exciton formation. See also: Journal of Abstracts, Physics, 1962, 6V388.

SUB CODE: IC, OP ENCL: 00

Card 1/1

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5

MORGENSTERN, Z.L.; VASILJEVA, N.F.

Luminescence of unactivated alkali iodides. Chekhosl fiz zhurnal 13 no.3:226-230 '63.

1. Lebedev Physical Institute, Academy of Science, Moscow, U.S.S.R.

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5

L 10079-63 EWT(1)/EWP(q)/EWT(m)/BDS/ERC(b)-2--AFFTC/ASD/SSD--
GJ/WH/IJP(C)/EH
ACCESSION NR: AP3000586 S/0051/63/014/005/0687/0690

AUTHOR: Bukke, Ye. Ye.; Morgenshtern, Z. L. 62

TITLE: Luminescence yield of the ruby 61

SOURCE: Optika i spektroskopiya, v. 14, no. 5, 1963, 687-690

TOPIC TAGS: ruby luminescence yield

TEXT: The dependence of the luminescence yield of the ruby on excitation-light wavelength has been studied within a broad spectrum. Ruby samples with a 0.05-0.07% Cr concentration, fixed in the center of a photometric sphere with a diameter of about 220 mm, were illuminated by a narrow collimated beam from a monochromator. Two photomultipliers were employed, one to register light transmitted by the ruby and the other, luminescence

Card 1/2

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ACCESSION NR: AP3000586

light scattered by the walls of the sphere. Fresnel reflection from the crystal was taken into account. A rhodamine-B etalon was used in the luminescence energy measurements. Absolute luminescence yield was measured by long-wave and R-line excitation. The results show that the yield does not differ greatly in the three luminescence bands and remains constant within each band. It is concluded that the resonance fluorescence yield of the ruby is close to unity. The short-wave (anti-Stokes) and long-wave parts of the spectrum around the R-lines are formed as a result of electron transitions from the R-levels. "We express our gratitude to M. D. Galanin for his interest and attention to the work." Orig. art. has: 3 figures.

ASSOCIATION: none

SUBMITTED: 23Jul63 DATE ACQ: 12Jun63 ENCL: 00

SUB CODE: 00 NO REF SOV: 005 OTHER: 002

bm/kl
Card 2/2

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5

VREDEN-KOBETSKAYA, T.O.; GEORGOBIANI, A.N.; GOLUBEVA, N.P.; GRIGOR'YEV, N.N.; ZHEVANDROV, N.D.; MORGENSHTEIN, Z.L.; PETUKHOVA, M.S.; RABINOVICH, N.Ya.; [illegible]; KHAN-MAGOMETOVA, Sh.D.; ANTONOV-ROMANOVSKIY, V.V., doktor fiz.-mat. nauk, otv. red.

[Luminescence; a bibliographic index for 1947-1961] Liuminestsentsiia; bibliograficheskii ukazatel', 1947-1961. Moskva, Nauka. Vol.2. 1964. 378 p. (MIRA 18:4)

1. Akademiya nauk SSSR. Sektor seti spetsial'nykh bibliotek.

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5

[illegible], [illegible], [illegible], [illegible]

The output of ruby luminescence. Acta physica Vol 2[illegible] no.3/4[illegible] [illegible].

1. Academy of Sciences of the U.S.S.R., Moscow.

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5

L 12161-66 FBD/EWT(1)/EWP(e)/EWT(m)/EEC(k)-2/T/EWP(k)/EWA(m)-2/EWA(h) SCTB/IJP(c)
WG/WH

ACC NR: AP6002465 SOURCE CODE: UR/0386/65/012/011/0507/0510

AUTHOR: Morgenshtern, Z. L.; Neustruyev, V. B.

ORG: Physics Institute im. P. N. Lebedev, Academy of Sciences, SSSR (Fizicheskiy institut Akademii nauk SSSR)

TITLE: Phosphorescence and band structure of ruby

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki. Pis'ma v redaktsiyu. Prilozheniye, v. 2, no. 11, 1965, 507-510

TOPIC TAGS: ruby, ruby laser, semiconductor band structure, phosphorescence, crystal

ABSTRACT: Prolonged phosphorescence, reliably recordable 2--3 days after the instant of excitation, was observed in ruby crystals following high-power optical excitation (with several laser flashes of 450 Joules). This phosphorescence attenuated hyperbolically with exponent $\alpha 1$, and its spectrum was located near the R line. To clarify the nature and mechanism of this pheromenon, the authors investigated the initial stages of the attenuation of phosphorescence excited with light of varying intensity and wavelength. They observed that 2--3 seconds after cessation of the excitation, the phosphorescence intensity varied hyperbolically with exponent $\alpha 1$, and that at the initial stage the time variation was even faster. Measurements of the initial brightness (I_0) as a function of the excitation intensity (E) have

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shown that $I_0 \sim E^{2-2.5}$. These data indicate that this is a recombination process. Measurements of the spectral dependence of the phosphorescence excitation have shown that the long-wave limit of this excitation is 6030 Å (~2 ev). Since such a quantum is insufficient to project the electron from the ground level of the chromium ion to the conduction band, it is natural to assume a more complex excitation process--cascade or multiphonon. To distinguish between these two possibilities, the authors undertook a series of experiments in which the ruby was excited with two light pulses applied either practically simultaneously [duration of the first pulse (pump) was 2.2 msec, that of the second (illumination) 0.8 msec; the start of the second pulse lagged behind the start of the first (by τ_{del} = 0.6 msec) or in sequence (τ_{del} = 2.4 msec)]. The results confirmed the cascade mechanism. A band structure (Fig. 1) is

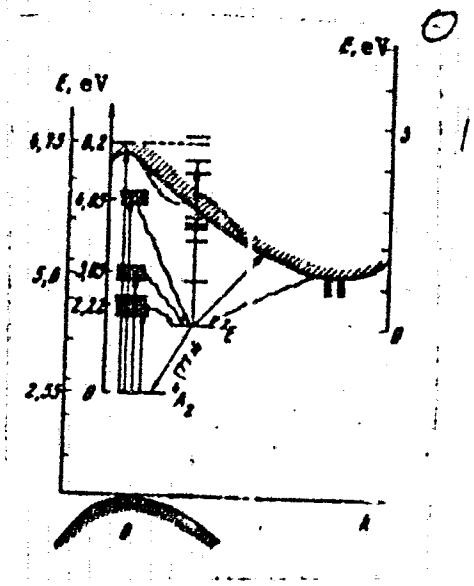

Fig. 1. Band structure of ruby

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ACC NR: AP6002465

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proposed on the basis of these data and results of earlier investigations of the absorption spectra of ruby and corundum. This structure explains some of the optical and semiconductor processes that take place in the ruby crystal. Authors thank M. D. Galanin and D. T. Sviridov for interest in the work and for valuable discussions. Orig. art. has: 1 figure.

SUB CODE: 20/ SUBM DATE: 19Oct65/ ORIG REF: 003/ OTH REF: 002

Card 3/3 HW

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5

L 4427-66 EWT(1)/EWT(m) LJP(c) RM
ACCESSION NR: AP5018846

UR/0368/65/003/001/0049/0055
535.37

AUTHORS: Morgenshtern, Z. L.; Neustruyev, V. B.; Epshteyn, M. I.

TITLE: Spectral distribution of the yield and the absolute yield of luminescence of some organic luminors

SOURCE: Zhurnal prikladnoy spektroskopii, v. 3, no. 1, 1965, 49-55

TOPIC TAGS: luminor, quantum yield, spectral energy distribution, luminescence spectrum

ABSTRACT: The dependence of the relative quantum yield of luminescence on the wavelength of the exciting light was measured in the range from 158 nm to the long-wave edge for seven organic luminors (sodium salicylate, terphenyl pyrazolin, blue-violet lumogen, yellow-green lumogen, red lumogen 640, and two luminors developed at Khar'kovskiy institut monokristallov (Kharkov Institute of Single Crystals). The absolute yield for excitation at 254 and 313 nm was also measured by two different methods. The measurements were made

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L 4427-66

ACCESSION NR: AP5018846

on easily reproducible infinitely thick layers. Reabsorption was disregarded. The procedure for measuring the spectral dependence of the relative yield was described by one of the authors elsewhere (Epshteyn, PTE no. 3, 118, 1961). The absolute yield was measured by two methods. The first employs a special instrument described elsewhere (Epshteyn, PTE no. 5, 186, 1963), and is intended for luminors used in fluorescent tubes. The second method involved the use of a converter luminor (lumogen red 640), which has a constant quantum yield over a certain absorption region. The best stability of yield and the largest endurance to light were exhibited by sodium salicylate, lumogen no. 2, and red lumogen 640, which are thus regarded as most suitable for use as standards in illuminescence investigations. 'We thank Ye Ye. Bukke for a discussion of the results and L. M. Khimina and L. Ye. Svyatova for help with the work.' Orig. art. has: 3 figures, 2 formulas, and 1 table.

ASSOCIATION: None

SUBMITTED: 21Jul64 ENCL: 00 SUB CODE: OP

NR REF SOV: 003 OTHER: 003

Card 2/2

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5

L 23462-66 EWT(1)/EWP(e)/EWT(m) RM/WH

ACC NR: AP6012796 SOURCE CODE: GE/0030/66/014/002/0303/0310

36
B

AUTHOR: Morgenshtern, Z. L.; Neustruev, V. B.

ORG: Physics Institute im. P. N. Lebedev, Academy of Sciences SSSR (Fizicheskiy institut Akademii nauk SSSR)

TITLE: Two-stage excitation of the phosphorescence of ruby 15

SOURCE: Physica status solidi, v. 14, no. 2, 1966, 303-310

TOPIC TAGS: phosphorescence, ruby, corundum, luminescence

21,44155

ABSTRACT: A long-duration phosphorescence of ruby was observed under intense optical excitation in the spectral region of the R-lines. The variation of initial brightness decay as a function of the intensity and wavelength of the exciting light suggests that the phosphorescence has a recombination character. The long-wavelength limit of excitation corresponds to about 2 ev. These results indicate a complex character for the phosphorescence excitation (two-photon or two-step). In order to differentiate between these two possibilities, experiments were performed using two excitation pulses with various time delays between the pulses. These experiments showed that two-step excitation of electrons into the conduction band of ruby takes place through the ^2E levels of the Cr ions. From these results and absorption data of ruby

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L 23462-66

ACC NR: AP6012796

and corundum, a band scheme is proposed which explains the long-wave-length limit of phosphorescence excitation in terms of indirect transitions. Orig. art. has: 6 figures and 2 formulas. [CS]

SUB CODE: 20/ SUBM DATE: 03Jan66/ ORIG REF: 015/ OTH REF: 010

ATD PRESS: 4236

Card 2/2

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5

MORGIEL, Janina; ZGIET, Jozef

Upper Chalk in the Dydnia Sa[illegible] (Sanok Carpathians). Kwartalnik geol 5 no.4:993-994 '61.

1. Karpacka Stacja Terenowa, Instytut Geologiczny, Warszawa.

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5

JASIONOWICZ, Jan; MORGIEL, Janina

The occurrence of mottled malms of the Weglowiec type in the vicinity of Wielopole Skrzynskie. Kwartalnik geol 6 no.2:439-440 '62.

1. Karpacka Stacja Terenowa, Instytut Geologiczny, Warszawa.

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5

MORGIEL, Janina

POLAND

MORGIEL, Janina; ZYTKO, Kazimierz

Carpathian Field Station, Geological Institute
(Karpacka Stacja Terenowa Instytutu Geologicznego)

Warsaw, Kwartalnik geologiczny, No 3, 1965, pp 547-48.

"Microfaunistic Profile of the Upper Cretaceous System--of the Eocene of Bandrow near Ustrzyki Dolne".

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5

MORGIEL, Janina

POLAND

KOSZARSKI, Leszek; MORGIEL, Janina

Carpathian Field Station, Geological Institute (Karpacka Stacja Terenowa Instytutu Geologicznego) (both)

Warsaw, Kwartalnik geologiczny, No 3, 1963, pp 555-57.

"Preliminary Investigations of the Biostratigraphy of Cretaceous System of the Skolska Unit in the Tarnow-Zawad Profile".

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5

MORGIEL, Janina; SIKORA, Waclaw

Microfauna of the Krosno beds of Liskowaty near Ustrzyki Dolne. Kwartalnik geol 7 no.2:306-318 '63.

1. Instytut Geologiczny, Karpacka Stacja Terenowa, Krakow.

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5

SZYMAKOWSKA, Franciszka; [illegible], Janina

Senonian fucoid marls in the Silesian series at Kolyle. Rocz geol Krakow 34 no.3:447-477 '64.

1. Carpathian Field Station, Krakow, of the Institute of Geology.

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5

MORGILEVSKAYA, I. YE.

22634 MORGILEVSKAYA, I. YE. Morfologicheskaya kharakteristika lagodekinskoy populyatsii lesnoy myshi. Trudy Zool. in-ta (Akad. nauk Gruz. SSR), t. VIII, 1949, s. 225-37. - Resyume na gruz yaz. - Bibliogr: 7 nazv.

SO: Letopis' Zhurnal'nykh Statey, No. 29, Moskva, 1949

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5

MORGILEVSKAYA, I.Ye.

The common field mouse (Microtus socialis Pall.) in forest nurseries. Soob.AN Gruz.SSR 14 no.6:351-355 '53. (MLRA 7:4)

1. Akademiya nauk Gruzinskoy SSR, Institut zoologii, Tbilisi.
(Field mice) (Forest nurseries)

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5

KORGILEVSKAYA, I.Ye.

Morphological description of four population groups of wood mice in Georgia. Trudy Zool.inst.AN Gruz.SSR 13:71-79 '54. (Georgia--Mice) (MLRA 8:8)

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5

MORGILEVSKAYA, L.Ya.

Wood mouse from the Trusovskoye Gorge. Trudy Inst. zool. AN Gruz. SSR 17:125-129 '60. (MIRA 13:11)
(Georgia--field mice)

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5

MORGILEVSKAYA, I.Ye.

A new subspecies of the forest mouse from Georgia. Soob. AN Gruz. SSR 29 no.6:735-736 D '62. (MIRA 18:3)

1. Institut zoologii AN GruzSSR, Tbilisi. Submitted July 28, 1961.

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5

MORGILEVSKAYA, M.Ye.

The Klukhori forest mice population. Trudy Inst. zool. AN Gruz. SSR 16:225-230 '58. (MIRA 11:12)
(Karachayevsk District--Field mice)

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5

MORGIN, P. I.

IYERUSALIMOV, M.Ya.; RYTSLIN, A.M.; MORGIN, P.I.

Radiomaterialogy of high-voltage insulation used in power systems. Izv. LPI 22:394-396 '57. (MIRA 11:3)
(Electric insulators and insulation--Testing)
(Radiology, Industrial)

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5

L 15722-65 EWT(m)/EWA(d)/EWP(b)/EWP(w)/EWP(t) ASD-3/AFFTC/ESD-3/IJP(c)/ESD(t)/
EWT(c)/EWM(c)/SSD/AFWL/ASD(a)-5/ASD(m)-3/AFWL JD
ACCESSION NR: AR4045880 S/0137/64/000/007/I035/I035

SOURCE: Ref. zh. Metallurgiya, Abs. 7I220

AUTHOR: Avraamov, Yu. S.; Kekalo, I. B.; Morgner, V.

TITLE: Effect of temperature, amplitude and frequency of elastic vibrations on the "magnetic" peak of internal friction in iron

CITED SOURCE: Sb. Relaksats. yavleniya v met. i splavakh. M., Metallurgizdat, 1963

TOPIC TAGS: temperature, amplitude, frequency, elastic vibration, magnetic peak, internal friction, iron, magnetic field, H lines of force, domain boundary

TRANSLATION: The properties of the magnetic peak of internal friction in electrolytic Fe annealed in H_2 were studied. Measurements were made on a relaxation oscillator built in the form of an inverted low frequency pendulum, in a temperature interval from -196 to +60° with a surface deformation of the sample of $2 \cdot 10^{-5}$ to $1 \cdot 10^{-5}$. Over the whole temperature interval investigated, internal friction, as a

Card 1/2

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L 15723-65
ACCESSION NR: AR4045880

function of the strength of a charging magnetic field H, changes along the curve to a maximum. The parameters of the magnetic peak (its height, width, H, the corresponding maximum value of internal friction) depend on temperature. With a decrease in temperature, the magnetic peak becomes broader, its height increases slightly, and it is displaced in the direction of higher values of H. At temperatures starting from -50° and up, the parameters of the magnetic peak change only slightly. The parameters of the magnetic peak at -196° depend strongly on the amplitude of the elastic vibrations. With an increase in amplitude, the field of the magnetic peak decreases monotonically according to the hyperbolic law. In cases where the Fe has a larger content of additives, the influence of the frequency of the vibrations on the height of the magnetic peak is not significant. Deformation at -196° brings about the disappearance of the magnetic peak. The effect of the Fe structure (additives, defects arising from cold working) on loss levels determined by irreversible displacements of the domain boundaries results in blocking the domain boundaries. 9 literature titles.

SUB CODE: MM, AS ENCL: 00

Card 2/2

APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5"

"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5

[illegible]21-65 EWT(m)/EWP(w)/EWA(d)/[illegible]/EWP(k)/[illegible](b) Pf-4 ASD-3/AFFTC/ESD-3/
[illegible]/ESD(gs)/ESD(t)/ESD/ESD/AFWL/ASD(a)-5/ASD(f)-2/ASD(m)-3/AS(mp)2 JD/HW
[illegible]SION NR: AR40[illegible] S/0137/64/000/007/I035/I035

[illegible]CE: Ref. zn. Metallurgiya, Abs. 7I221

AUTHOR: Kekalo, I. B.; Livshits, B. G.; Morgner, V.; Sokolov, A. Yu.

TITLE: Effect of deformation and magnetic effects on the internal friction of iron

CITED SOURCE: Sb. Relaksats. yavleniya v met. i splavakh. M., Metallurgizdat, 1963, 176-183

[illegible]C TAGS: deformation, magnetic effect, internal friction, iron, domain boundary, ferromagnetism

TRANSLATION: Transitory instability of Armco iron and electrolytic iron samples was investigated in various initial states after demagnetization by a changing field, in a state of residual induction, and after elastic deformation). Study was also made of the recovery [illegible]stabilized internal friction brought about by losses due to magnetic hysteresis, as a result of magnetic and deformation exposure to and removal from elastic stress) effects. Internal

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ACCESSION NR: AR4045881

friction was measured with an inverted low frequency torsion pendulum at temperatures from -196 to +100°. In the study of Fe annealed in H_2 (in this case there were losses due to magnetic hysteresis), instability was found in the temperature interval from [illegible] to +5°. Outside this interval, the internal friction of Fe was stable, independent of the initial state of the sample. Instability of internal friction is observed in samples subjected to magnetic (constant and changing field) and deformation effects. An increase in internal friction, as a result of deformation effects, leads to approximately the same level independent of the initial state of the [illegible], including the state following stabilization of internal [illegible]ion. The high residual value of internal friction in Fe, [illegible]ed in H_2, is connected with losses due to magnetic hysteresis, [illegible]ed by heterogeneous displacements of the domain boundaries [illegible] the effect of external elastic stresses. The decrease of [illegible] with the passage of time is explained by the redistribution of foreign atoms, as a result of which there comes about a blocking of the domain boundaries and a decrease in losses due to magnetic hysteresis. 10 literature titles.

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EWT(m)/EWP(t)/EWP(k)/EWP(b) Pf-4 IJP(c)/SSD/ASD(f)-2/ESD(gs)/
AFWL JD/HW

ACCESSION NR: AR4046552 S/0059/64/000/008/F046, E087

SOURCE: Ref. zh. Fizika, Abs. 8E670

AUTHORS: Avramov, Yu. S.; Kekalo, I. B.; Morozov, V.

TITLE: Effect of temperature, amplitude, and frequency of elastic oscillations on the "magnetic" peak of internal friction in iron

CITED SOURCE: Sb. relaks. yavleniya v met. i splavakh, M., Metallurgizdat, 1963, 184-189

TOPIC TAGS: iron, internal friction, temperature dependence, magnetic field intensity, elastic vibration, elastic deformation, domain structure

TRANSLATION: A study was made of the properties of the magnetic peak (MP) of the internal friction (IF) in electrolytic iron annealed in H_2. The measurements were made on a relaxator assembled in accordance with the scheme of an inverted low-frequency pendulum, in the temperature interval from -196 to +60C, on samples 70 mm long and 2.7 mm in diameter. The plot of the IF as a function of the alternating magnetic field intensity exhibits a maximum in the entire investigated tem-

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perature interval. The parameters of the given MP (height, width, field corresponding to the maximum MP) depend on the temperature. With decreasing temperature, the MP broadens, its height increases slightly, and the MP shifts toward higher values of the constant-field intensity. The MP parameters at a chosen temperature depends strongly on the amplitude (A) of the elastic vibrations. With increasing A the MP field decreases monotonically in accordance with a hyperbolic [illegible] height of the peak first increases and then decreases. The parameters of [illegible] are strongly influenced by plastic deformation of the sample. The uniqueness of the variation of the parameters at the MP with the temperature variation [illegible] to the temperature variation of the constants of the magnetic state of [illegible] and with the accompanying changes in the magnetic domain structure.

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[illegible] EWT(m)/EWP(w)/EWA(d)/EWP(t)/EWP(k)/EWP(b) Pf-4 ASD-3/AFFTC/ESD-3/ [illegible] S(mp)-2 JD/

ACCESSION NR: AR4045883 S/0137/64/000/007/I035/I036

SOURCE: Ref. zh. Metallurgiya, Abs. 7I223

AUTHOR: Kekalo, I. B.; Livshits, B. G.; Morgner, V.

TITLE: The effect of elastic deformation and certain magnetic effects on the internal friction of iron

CITED SOURCE: Sb. Relaksats. yavleniya v met. i splavakh. M., Metallurgizdat, 1963, 190-197

TOPIC TAGS: elastic deformation, magnetic effect, internal friction, iron, domain boundary, ferromagnetism, temperature dependence

TRANSLATION: Investigations were made on wire samples made of Armco iron and electrolytic iron. Internal friction was measured with an inverted low frequency torsion pendulum; deformation on the surface of the sample was $6 \cdot 10^{-5}$. The character of the temperature dependence of the internal friction of both kinds of Fe samples depends hardly at all on magnetization. Refining the Fe leads to a sharp increase in residual internal friction (approximately 3 times) and to the

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ACCESSION NR: AR4045883

appearance of a dependence of internal friction on magnetization. This increase in residual internal friction is explained by the fact that refining decreases the total amount of impurities in the Fe and renders easier the displacement of domain boundaries by the effect of external stresses, and this in turn leads to an increase in losses due to magneto-elastic hysteresis. An amplitude dependence of internal friction is observed only in the case of Fe annealed in H_2. In the case of annealed samples, a reversible effect of the influence of preliminary elastic deformation on internal friction is observed. At a given temperature, internal friction depends not only on preliminary deformation, but also on the type of magnetic effect. The change in internal friction effected by preliminary deformation is not connected with plastic deformation, but is determined by magneto-elastic processes and appears reversible in relation to magnetic effects. 15 literature titles.

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BIYEV, I.I.; MORGOLIN, P.A., retsenzent; MAKOVSKIY, G.M., inzh., red.

[Mechanization of part painting] Mekhanizatsiia pri okraske detalei. Moskva, Mashinostroenie, 1964. 77 p. (MIRA 17:9)

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MORKOVIN, V.; MEDUNOV, F.

New method of marking clothes. Prom.koop. no.8:15 Ag '57.
(MLRA 10:9)

(Cleaning and dyeing industry)

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"APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R001135130002-5

MORGNER, V.; AVRAAMOV, Yu.S.

Low-temperature internal friction in pure iron. Fiz. met. i metalloved. 16 no.4:635 O '63. (MIRA 16:12)

1. Moskovskiy institut stali i splavov.

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BRANDT, E.I.; MORGOLINA, O.I.

Daily periodicityo of physiological processes in the human body during a multiphase workday. Opyt izuch.reg.fiziol.funk. no.3: 190-203 '54. (MLRA 8:12)

1. Otdel promyshlennoy sanitarii i gigiyeny truda Dorsanepidstantsii Oktyabr'skoy zheleznoy dorogi i Laboratoriya ekologicheskoy fiziologii Instituta fiziologii imeni I.P.Pavlova Akademii nauk SSSR.

(BODY TEMPERATURE) (PULSE) (BLOOD PRESSURE)

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MOR G-03, V.

HUNGARY/Organic Chemistry. General and Theoretical Problems of Organic Chemistry. G-1

Abs Jour: Ref. Zhur.-Khimiya, No II, 1958, 36083.

Author : Csuros Z., Geczy I., Morgos J.
Inst : Not given.
Title : Study of Catalists. XIV. Catalitic Oxidation of N-Cymol at Room Temperature.

Orig Pub: Magyar Tud. akad. Kem. tud. oszt. kozl., 1956, 7, No 2, 199-211.

Abstract: No abstract.

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Catalysts. XIX. Changes in the sorption of hydrogen as a function of the quantity of catalyst and carrier. I. Czurós, I. Gáspy, and J. Morgós (Tech. Univ., Budapest). Acta Chim. Acad. Sci. Hung. 16, 301-19(1958)(in English); cf. C.A. 53, 19371b.—The H uptakes of increasing quantities of Pd on C black or $BaSO_4$ suspended in H_2O, follow a max.-min. curve. With increasing amts. of C but the same amt. of Pd, the H uptakes follow a similar max.-min. curve with the extreme values shifted. A similar curve was obtained when the amt. of C was const. and amts. of Pd increased. Pd on $BaSO_4$ exhibited the same behavior when the amts. of catalyst or carrier were varied.

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CSUROS, Z., prof. (Budapest XI., Muegyetem rakpart 3.); MORGOS, J. (Budapest XI., Muegyetem rakpart 3.); LOSONCZI, B. (Budapest XI., Muegyetem rakpart 3.); GECZY, I. (Budapest XI., Szamuelly utca 30-32.)

Investigation of correlation between the inhibitor effect and chemical constitution. Periodica polytechn chem 5 no.2:123-137 '61.

1. Lehrstuhl fur Organisch-Chemische Technologie, Technische Universitat, Budapest. (for Csuros, Morgos, Losonczi) 2. Vegyimuveket Tervezo Vallalat, Budapest. (for Geczy).

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Replacing blast-furnace slag with Handlova lignite ash. p. 340.
STAVIVO. (Ministerstvo stavebnictvi) Praha. Vol. 32, no. 10, Oct. 1954.

SOURCE: East European Accessions List, V61.5, no. 9, September 1956

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