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23338 S/058/61/000/006/024/063
A001/A101

24.3500 (1137, 1138, 1395)

AUTHOR: Yaek, I.V.

TITLE: Sensitized phosphorescence of NaCl-Tl, Mn

PERIODICAL: Referativnyy zhurnal. Fizika, no. 6, 1961, 178, abstract 6V324 ("Tr. In-ta fiz. i astron. AN EstSSR", 1960, no. 12, 278 - 280)

TEXT: The author studied the phenomenon of sensitized phosphorescence in NaCl-Tl, Mn prepared by the diffusion method from the gaseous phase. The absorption spectrum of NaCl-Tl, Mn was obtained as well as the emission spectrum at excitation in the region of transition $^1S_o \rightarrow {}^3P_1$ in ions of Tl^+. The emission spectrum consists of two main bands (transitions $^3P_1 \rightarrow {}^1S_o$ in Tl^+ and $^4G \rightarrow {}^6S$ in Mn^{2+}) appearing in the spectrum of afterglow. The phosphorescence spectrum in the region of $^4G \rightarrow {}^6S$ transition, measured a few minutes after discontinuation of excitation in the Tl absorption band, coincides with the fluorescence spectrum of Mn^{2+} ions. The spectrum of phosphorescence excitation of Mn^{2+} ions is located in the region of the absorption band $^1S_o \rightarrow {}^1P_1$ of Tl^+ ions. In systems yielding sensitized fluorescence (NaCl - Tl, Mn) the effect of "memorizing" of excitation

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Sensitized phosphorescence of NaCl-Tl, Mn

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place does not arise (RZhFiz, 1960, no. 11, 31259); this, in the author opinion, is connected with the mechanism of sensitized phosphorescence of NaCl-Tl, Mn which consists in the energy transfer from excited Tl^{2+}, originated as a result of a recombination process, to Mn^{2+} ions being in proximity.

N. M.

[Abstracter's note: Complete translation]

Card 2/2

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24663
S/081/61/000/009/003/015
B101/B205

24,3500

AUTHORS: Liyd'ya, G. G., Yaek, I. V.

TITLE: Formation of F centers in the KI-Tl crystal by ultraviolet rays

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 9, 1961, 31, abstract 9B213 (9B213) ("Tr. In-ta fiz. i astron. AN EstSSR", 1960, no. 12, 281 - 284)

TEXT: The formation of F centers in monocrystalline layers of the KI (Tl) phosphor has been studied in detail. It was found that the accumulation of light energy exhibits three different mechanisms, depending on the excitation energy: an electron-hole, an exciton, and a "delocalized" mechanism (RZhKhim, 1960, no. 9, 33849), all of which lead to the formation of F centers. The luminescence of KI(Tl) during excitation has also been studied. The steady luminescence consists of two components, i. e., a "rapid" (fluorescent lifetime shorter than 1 sec) and a "recombinative" one (fluorescent lifetime of the order of 1 min). An

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external temperature quenching is observable during excitation within the main absorption range: The recombinative part is quenched at 260 - - 370°K. This occurs long before the internal quenching sets in. [Abstracter's note: Complete translation.]

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68331

SOV/51-8-1-38/40

24,3500

AUTHORS: Yaek, I.V. and Liyd'ya, G.G.

TITLE: Excitation of Recombination Luminescence in the Fundamental Absorption Bands of Certain Halides

PERIODICAL: Optika i spektroskopiya, 1960, Vol 8, Nr 1, pp 142-144 (USSR)

ABSTRACT: Luminescence of activator ions is excited in the fundamental absorption bands of alkali-halide phosphors. Transfer of energy from the base to the activator may occur via excitons or as a result of electron-hole processes. In the latter case either electron recombination luminescence is possible (free electrons recombine with holes localized at or near luminescence centres) or hole recombination luminescence (holes recombine with electrons localized at or near luminescence centres). The relative importance of these processes was studied using excitation spectra of steady-state luminescence and recombination luminescence (phosphorescence). This study was extended to fundamental absorption bands corresponding to exciton formation and "band-band" transitions. Alkali iodides (KI:Tl, KI:In, CsI:Tl, RbI:Tl, CdI_2:Pb) with fundamental absorption bands lying in the region $\lambda > 185$ mμ were the objects of this investigation. The excitation spectra of phosphorescence were the functions $I_{ph}(\nu) = I^{*}_{ph}/B(\nu)$,

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Excitation of Recombination Luminescence in the Fundamental Absorption Bands of Certain Halides

where I_{ph}^{*} is the intensity of afterglow at a time t since the end of excitation, and $B(\nu)$ is the intensity of the exciting light. Under the conditions of total absorption (neglecting reflection losses) these functions are the phosphorescence yield spectra. The phosphors were excited using light of 186-225 mμ from a condensed spark between Zn, Cu, Al electrodes. In the region $\lambda > 210$ mμ the phosphors were also excited with light from a hydrogen lamp passed through a monochromator of a spectrophotometer SF-4. The quantity $B(\nu)$ was found using an anthracene screen. Phosphorescence was recorded with a photoelectric photometer, consisting of FEU-19, a d.c. amplifier and an automatic-recording potentiometer EPP-09. A special check showed that the intensity of luminescence was proportional to the intensity of the exciting light. A figure on p 143 shows the absorption spectrum of the base (curve 1), the excitation spectrum of phosphorescence (curve 2) and of steady-state luminescence (curve 3) of KI with 0.06 mol.% of Tl (the upper part of the figure) and of RbI:Tl (the lower part of the figure). The excitation spectra of the remaining iodides were similar. Three regions can be distinguished in the absorption spectrum: the activator absorption (transitions $^1S_0 \rightarrow {}^3P_1$ and $^1S_0 \rightarrow {}^1P_1$ in Tl^+ ions), the exciton absorption (ex) and the absorption corresponding to "band-band" transitions (e + p).

Card 2/3

luminescence is impossible. The present work was carried out under the direction of Ch. B. Lushchik. There are 1 figure and 11 references, 7 of which are Soviet, 2 English, 1 German and 1 translation from English into Russian.

Card 3/3

SUBMITTED: June 10, 1959

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001961810015

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001961810015-9

Excitation of Recombination Luminescence in the Fundamental Absorption Ba
Certain Halides

Steady-state luminescence and phosphorescence was excited in all these absorption regions. In all these phosphors recombination luminescence is excited in the exciton bands with a non-zero yield but this yield is smaller than in the neighbouring absorption bands. To the left of the exciton band a sharp rise of the phosphorescence yield was observed (in KI:Tl, KI:In and RbI:Tl this occurs near 5.9 eV, in CsI:Tl it lies near 6.3 eV), confirming the presence of "band-band" transitions (Refs 9, 11). The authors recorded also the spectra of corresponding to "band-band" transitions and in the exciton and stimulation of optical flash after excitation of KI:Tl in the region activator absorption bands. The spectrum of F-centre formation in KI:Tl (determined by comparing the intensity of a flash stimulated in the F-band with phosphorescence) showed that, in the absorption bands of both the activator and the base, electron recombination luminescence is excited. It does not follow that hole recombination the direction of Ch. B. Lushchik. The present work was carried out under 7 of which are Soviet, 2 English, 1 German and 1 [illegible] references, English into Russian. There are 1 figures and 11 references, June 10, 1959 translation from

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3/14/2001 CIA-RDP86-00513R0019618100

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001961810015-9

68332

24,3500

AUTHORS: Kark, V. Ya., Lushchik, Ch.B. and Yaek, I.V. SOV/51-8-1-39/40

TITLE: On Sensitized Phosphorescence of Halide Phosphor Crystals

PERIODICAL: Optika i spektroskopiya, 1960, Vol 8, Nr 1, pp 144-146 (USSR)

ABSTRACT: The paper deals with sensitized phosphorescence of activated alkali halide crystals. The mechanism of this phosphorescence differs radically from sensitized phosphorescence of organic molecules (Ref 11) and from sensitized luminescence of ZnS phosphors due to migration of holes. The authors investigated the excitation spectra of phosphorescence (the technique was described earlier, Ref 13) of KBr:Tl,In. It was found that recombination luminescence of Tl^+ ions is excited on absorption in the thallium absorption bands and phosphorescence of indium on absorption in the indium absorption bands. The phosphor seems to "remember" the nature of excitation. Sensitized phosphorescence did not occur in KBr:Tl,In. Following a suggestion by one of us, Shvarts and Zirnits investigated sensitized fluorescence of several poly-activated phosphors (Ref 14). In agreement with the data reported by American workers (Ref 15), a transfer of energy between Pb^{++} and Mn^{++} was observed in NaCl:Pb,Mn and KCl:Pb,Mn phosphors. Shvarts and Zirnits found also transfer of energy from Tl^+ and In^+ ions to Mn^{++} ions in NaCl:Tl,Mn and NaCl:In,Mn phosphors. Malyshev found similar

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On Sensitized Phosphorescence of Halide Phosphor Crystals

behaviour in $CdBr_2$:Pb,Mn and CdI_2:Pb,Mn systems (Ref 16). The present authors attempted to find sensitized phosphorescence in systems in which sensitized fluorescence was observed earlier, e.g. $CdBr_2$:Pb,Mn which exhibits strong recombination luminescence (Ref 3). A figure on p 145 shows the excitation spectra of phosphorescence of Pb^{++} (curve 1) and Mn^{++} ions (curve 2) of the latter phosphor. The spectra are identical and they correspond to the activator absorption by lead (transitions $^1S_0 \rightarrow {}^1P_1$ and $^1S_0 \rightarrow {}^3P_1$ transitions in Pb^{++} ions). At 293°K phosphorescence of Mn^{++} ions was observed many seconds after excitation in the absorption bands of Pb^{++} ions ($^1S_0 \rightarrow {}^3P_1$ transition); this is, of course, sensitized phosphorescence of $CdBr^2$:Pb,Mn. The figure also includes the luminescence spectrum of $CdBr_2$:Pb,Mn (curve 3) excited in the absorption band at 3.9 eV, the latter corresponding to the electron transition $^1S_0 \rightarrow {}^3P_1$ in Pb^{++} ions. Two bands appear in luminescence, one of which was observed also in $CdBr_2$:Pb and corresponds to the transition $^3P_1 \rightarrow {}^1S_0$ in Pb^{++} ions. The second band in curve 3 (at longer wavelengths) appears after introduction of manganese into $CdBr_2$:Pb

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On Sensitized Phosphorescence of Halide Phosphor Crystals SOV/51-8-1-39/40

and corresponds to transitions $^4G \rightarrow {}^6S$ in Mn^{++} ions. The figure on p 145 includes also a qualitative phosphorescence spectrum of $CdBr_2$:Pb,Mn (curve 4), obtained after excitation in the 3.9 eV band. The similarity of the spectra at the moment of excitation and of subsequent phosphorescence indicates resonance energy transfer to Mn^{++} ions after excitation of Pb^{++} ions and as a result of intermediate recombination processes. There are 1 figure and 17 references, 15 of which are Soviet and 2 English.

SUBMITTED: June 10, 1959

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YAEK, I.V.

Step dependence of the recombination luminescence quantum yield of alkali halide crystallophosphors on the frequency of the light inducing the excitation. Opt. i spektr. 8 no.4:577-579 Ap. '60. (MIRA 13:11)

(Alkali halide crystals) (Phosphors)

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YAEK, I. V.

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E201/E691

24.3500

AUTHORS: Lushchik, Ch.B., Liyd'ya, G.G., Yaek, I.V. and Tiysler, E.S.

TITLE: The Mechanism of the Recombination Luminescence of Activated Alkali-Halide Crystals

PERIODICAL: Optika i spektroskopiya, 1960, Vol 9, Nr 1, pp 70-76 (USSR)

ABSTRACT: This paper was presented in an expanded version at the Conference on Physics of Alkali-Halide Crystals (Tartu, June 1959). The authors report and discuss the results of an investigation of the recombination luminescence (due to recombination of electrons and holes) and photochemical transitions (optical bleaching) in KCl, KBr and KI crystals activated with Ga^{+}, Ge^{++}, In^{+}, Sn^{++}, Tl^{+} and Pb^{++}. The crystals were excited with X-rays and light in the regions of exciton and activator absorption bands and of the "band-band" transitions. The role of electron, hole, exciton and sensitization processes is discussed. The discussion is illustrated by excitation, luminescence, thermoluminescence, optical flash stimulation, optical and thermal bleaching spectra (Figs 1-5). There are 5 figures and 32 references, 30 of which are Soviet and 2 English.

Card 1/1

SUBMITTED: September 28, 1959

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31116
S/613/61/000/014/010/019
D207/D303

9,4175 (1114, 1163)

AUTHORS: Liyd'ya, G. G., and Yaek, I. V.

TITLE: External thermal and optical quenching of KI:Tl photoluminescence

SOURCE: Akademiya nauk Estonskoy SSR. Institut fiziki i astronomii. Trudy. No. 14, 1961. Issledovaniya po lyuminestsentsii, 236-246

TEXT: The authors studied the effect of external quenching (heating and infrared F-band illumination) on luminescence of the KI phosphor containing 0.05 mol. & Tl; external quenching means processes occurring outside luminescence centers. A thin layer (4 μ) was used and the Tl^+ emission was selected by means of filters. The phosphor was excited with short ultraviolet radiation in the fundamental absorption region. Excitation at λ = 219 mμ produced anion excitons and at λ = 186 mμ it generated free electrons and holes. The rise curve showed that luminescence consisted of two components: A "fast" component which rose to its steady-state va-

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lue in less than 1 sec from beginning of excitation and a "slow" component which reached the steady state in about 1 min. The fast component exhibited no optical quenching (it was unaffected by F-band illumination), but it was quenched thermally at 500 - 600°K. It was, therefore, concluded that the fast component represented "direct" excitation of activator ions. The slow component was quenched thermally at 250 - 350°K, indicating typical external quenching of recombination luminescence. F-band illumination (λ = 680 mμ) quenched the slow component when excitation produced inter-band transitions, but the slow component was enhanced when ultra-violet excitation generated excitons. A simple theory, accounting for the observed quenching and enhancement of the slow component, is given in the paper. Acknowledgment is made to Ch. B. Lushchik who directed this work. There are 2 figures and 21 references: 19 Soviet-bloc and 2 non-Soviet-bloc. The references to the English-language publications read as follows: H. Klasens, Nature, 158, 306 (1946); F. Seitz, Rev. Mod. Phys., 26, 7 (1954).

SUBMITTED: August 9, 1960

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001961810015-9

S/058/62/000/008/043/134
A061/A101

24.7700

AUTHORS: Lushchik, Ch. B., Liyd'ya, G. G., Soovik, T. A.; Yaek, I. V.

TITLE: The mechanism of the luminescence of alkali halide crystals under excitation by ultraviolet and hard radiations

PERIODICAL: Referativnyy zhurnal, Fizika, no. 8, 1962, 42, abstract 8V294 ("Tr. In-ta fiz. i astron. AN EstSSR", 1961, no. 15, 103 - 126; summary in English)

/B

TEXT: The physical processes taking place in ionic crystals under the action of UV and hard radiations are examined. Attention is chiefly devoted to the interaction of different elementary excitations of the basic substance with luminescence centers. An attempt is made to appraise the relative role of exciton and electron-hole processes in gamma and R luminescence. There are 76 references.

[Abstracter's note: Complete translation]

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001961810015-9

S/058/62/000/008/047/134
A061/A101

AUTHORS: Yaek, I. V., Eksina, T. I.

TITLE: Non-isothermal relaxation processes in KBr-Tl single crystals exposed to X-radiation and ultraviolet excitation

PERIODICAL: Referativnyy zhurnal, Fizika, no. 8, 1962, 43, abstract 8V300 ("Tr. In-ta fiz. i astron. AN EstSSR", 1961, no. 15, 127 - 137; summary in English)

TEXT: Non-isothermal relaxation processes in deformed and non-deformed KBr-Tl crystals excited by X-rays and also by ultraviolet radiation in the region of activator and exciton absorption bands are intercompared. The causes of divergences in the course of the relaxation processes for different forms of excitation are discussed.

[Abstracter's note: Complete translation]

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001961810015-9

LUSHCHIK, Ch.B.; LIYD'YA, G.G.; LUSHCHIK, N.Ye.; SHVARTS, K.K.; YAEK, I.V.

Physical processes in alkali halide crystal phosphors activated by mercury-like ions. Fiz.tver.tela 3 no.4:1176-1184 Ap '61. (MIRA 14:4)

1. Institut fiziki i astronomii AN Estonskoy SSR, Tartu.
(Phosphors)

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89237

S/048/61/025/001/003/031
B029/B067

9.6150 (also 1137, 1395)

AUTHORS: Luchik, Ch. B., Liyd'ya, and Yaek, ~~I. B.~~

TITLE: Mechanism of the processes of energy accumulation by crystal phosphors

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, v. 25, no. 1, 1961, 23-27

TEXT: The present paper deals with the following mechanisms of energy accumulation by crystal phosphors: production mechanism of F-centers in crystals, and mechanisms of thermal and optical "de-excitation" of ion crystals. Three stages are distinguished in energy accumulation by crystals: 1) production of a long-lived excited state; 2) long-lasting conservation of the excited state; 3) processes of "de-excitation" of the crystal. D. I. Blokhintsev (Ref. 1) showed that the electrons and holes occurring after excitation are localized at lattice defects which are far from one another. For this reason, their direct recombination is impossible, and the electrons or holes must be set free from the trapping centers for "de-excitation" of the crystal. Intense ion diffusion prevents

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the crystal from remaining in the excited state for a long time. Even in the production of the simplest F-centers it is necessary to take account of both the active role of electron - hole processes and exciton, sensitizing, ion processes, etc. The number, n_F, of F-centers can be concluded either from the absorption $\varkappa_F \sim n_F$, from the intensity of luminescence photo-stimulated in the F-region, or from the electron emission photo-stimulated from the F-centers. The accuracy of the two last-mentioned methods exceeds the first by several orders of magnitude. Fig. 1 shows the absorption spectra (1) and the spectra of the production of F-centers (2) for the phosphors KCl - Ca, Tl; KBr - Ga; KBr - In; and KBr - Tl. According to the data obtained, the $^1P_1$ states of monovalent impurity ions can be "de-localized" with a certain probability, which results in the formation of F- and V-centers in the basic material of the crystal. Fig. 2 shows the spectrum of the production of F-centers in KI - Tl as measured by the luminescence method. F-centers are formed not only in the ac region but also in the ex (~220 mμ) and ep regions (~190 mμ) with even stronger efficiency. The production mechanisms of F-centers in the ex- and

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ep-regions differ from each other. The dislocation mechanism of the production of F-centers needs additional investigations. The authors then discuss the mechanisms of thermal and optical de-excitation of ion crystals. The third stage of the phenomenon studied here has been investigated in previous papers. The thermal destruction of F-centers in alkali-halide crystals does not lead to their direct thermal ionization. For the NaCl, KCl, and KBr crystals, the thermal destruction of F-centers in the range 100-300°K is connected with hole processes; in the range 400-500°K, however, it is related to electron processes. The ultraviolet radiation at the same frequencies (in the ex and ep regions) is capable of producing and destroying F-centers. Finally, the authors demonstrate that alkali-halide salts are typical crystal phosphors. During an investigation of the luminescence of alkali-halide salts with excitation in the region of self-absorption of the crystal it has been found that many phenomena observed in these crystals are the same as in ZnS phosphors. This investigation was carried out at Tartu. Further details on this subject will be published later. 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 38 references: 32 Soviet-bloc and 5

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non-Soviet-bloc.

ASSOCIATION: Institut fiziki i astronomii Akademii nauk ESSR (Institute of Physics and Astronomy, Academy of Sciences of the Estonskaya SSR)

Legend to Fig. 1: spectra of absorption (1), of F-center production (2), of negative, excited absorption (3), and of the production of activator centers (4).
Legend to Fig. 2: 1) absorption spectrum, 2) spectrum of the excitation of steady luminescence, 3) of recombination phosphorescence, 4) of optical flash-up, 5) and 6) emission spectra in the case of steady luminescence and optical flash-up, 7) spectra of the stimulation of optical flash-up

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Mechanism of the processes of energy ...

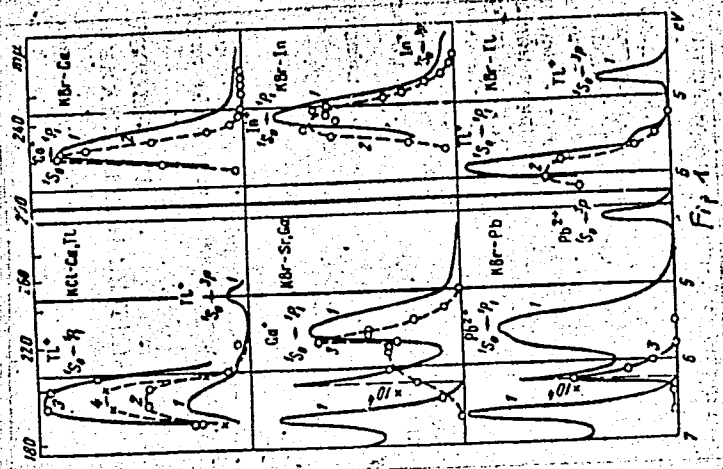

Fig. 1

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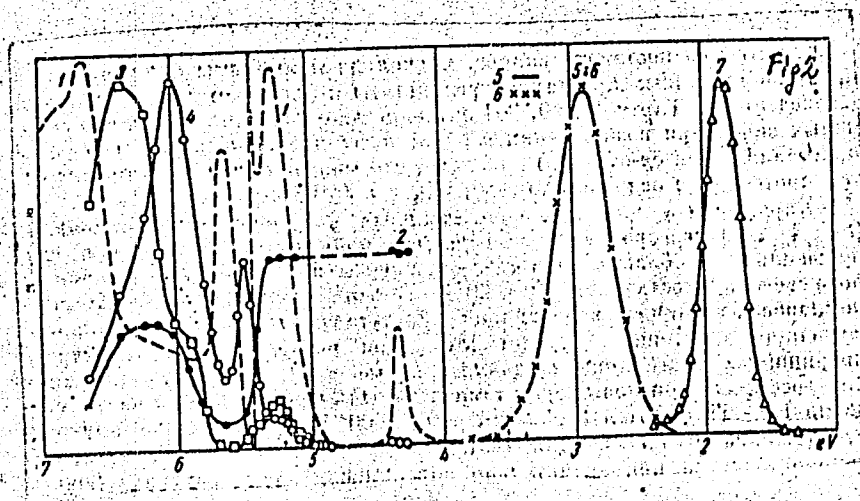
Mechanism of the processes of energy ...



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B104/B214

24.3500(1138,1153,1395)

AUTHOR: Yaek, I. V.

TITLE: Investigation of the effectiveness of recombination luminescence of alkali halide crystal phosphors

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, v. 25, no. 3, 1961, 379-380

TEXT: This paper was read at the Ninth Conference on Luminescence (Crystal Phosphors) held in Kiyev from June 20 to 25, 1960. For a general investigation of nonisothermal relaxation processes, a so-called "relaxation combine" was developed by the authors. With the help of this combine, the curve of thermal decoloration $K(T)$, thermal de-excitation $I(T)$, and thermo-optical de-excitation $I_\lambda(T)$ of a crystal can be simultaneously recorded; and the "instantaneous efficiency of thermoluminescence" can also be measured. The latter characteristic is determined from the formula: $$Q(T) = \left[\frac{I}{-dn/dt}\right]_T .$$

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Here, I is the intensity of luminescence, and n the number of color centers. The experimental determination of this characteristic requires the simultaneous measurement of $I(T)$ and $\chi(T)$, since $n \sim \chi_m \sqrt{T}$. These quantities were determined for single crystals of KCl-Tl, KBr-Tl, and NaCl-Tl irradiated with X-rays. The results are graphically represented in Fig. 1. The curves are schematic. Curve 1 represents the thermal decoloration of the F-band, curve 2 that of the band with $\lambda_m = 360\ m\mu$. Curve 3 represents the thermal de-excitation (with separation filter for the luminescence of the Tl^+ ions), and curve 4 shows $Q(T)$ for the phosphor KCl-Tl. It is supposed that the step-like character of $Q(T)$ corresponds to different electron and hole states of the relaxation process. At the various stages, the value of $Q(T)$ varies from 0 to ∞. The infinite values are due to the circumstance that in the range of investigation the F-centers are not destroyed and the observed thermoluminescence coincides with the decomposition process of other color centers. The vanishing of $Q(T)$ is related to the low effectiveness of energy transfer from the recombination centers to the luminescence centers, and is usually obtained in the hole states of the relaxation process. Curves 3' and 4' in Fig. 1

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S/048/61/025/003/027/047
B104/B214

represent the thermal de-excitation and the effectiveness of thermoluminescence for a KCl-Tl phosphor exposed to X-rays at room temperature and at 450°C. For the elementary stage of the relaxation process, the instantaneous effectiveness of thermoluminescence has a constant value. In the author's view, this experimental fact demonstrates the quasi-steady concentration of electrons in the conduction band, an assertion arrived at theoretically by E. I. Adirovich. There are 1 figure and 7 Soviet-bloc references.

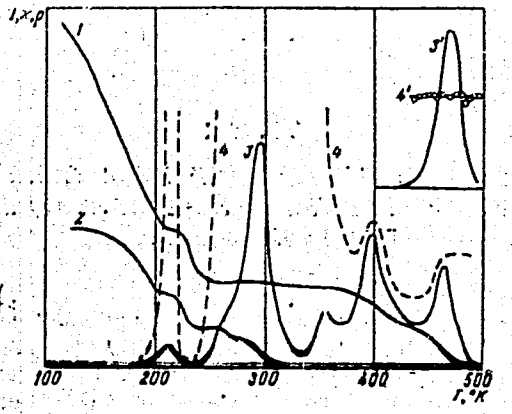

Fig. 1

Card 3/3

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001961810015-9"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001961810015-9

ACCESSION NR: AT3013084 S/2613/62/000/021/0096/0116

AUTHORS: Yaek, I. V., Okk, M. F.

TITLE: Recombination luminescence spectra in KCl crystals activated with mercury-like ions

SOURCE: AN EstSSR. Institut fiziki i astronomii. Trudy*, no. 21, 1962, 96-116

TOPIC TAGS: spectra, luminescence spectra, activated crystal, emission center, recombination luminescence spectra, potassium chloride crystal, mercury like ions

ABSTRACT: By means of photoelectric methods, recombination luminescence spectra (spectra of optical flash stimulated in the F-band, spectra of thermoluminescence and phosphorescence) in KCl-Ga, KCl-Tl, KCl-Sn, and KCl-Pb phosphors previously excited with x-rays have been measured. The KCl-In, KCl-Ga and KCl-Sn crystals were prepared by the Stokbarger method and the rest by the Kiropoulus technique. As spectrometer, a monochromator spectrometer SF-4 was used with photoelectric multiplier MI2-FQS35 and potentiometer EPP-09. It is shown that the spectral composition of electronic recombinational luminescence corresponds in the main to the activator ions in phosphors activated both by monovalent (Ga^+; In^+; Tl^+) and

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ACCESSION NR: AT3013084

bivalent (Sn^{++} and Pb^{++}) ions. In the hole stages of the relaxation processes (in the temperature range of 100-150 K) thermoluminescence of KCl-In and KCl-Ga phosphors involves emission of In^{+} and Ga^{+} ions. No luminescence of Tl^{+} ions in KCl-Tl phosphor in this region is observed. In phosphors with several types of emission centers (KCl-Tl and KCl-In, Tl) complex redistribution of emission band intensities was observed during the relaxation processes. After ultraviolet excitation of KCl-In, Tl phosphor in the $^1S_0 \rightarrow {}^1P_1$ absorption band of In^{+} ions only indium radiation could be detected in thermoluminescence. "The authors express their gratitude to Ch. B. Lushchik for his help." Orig. art. has: 7 figures.

ASSOCIATION: AN EstSSR. Institut fiziki i astronomii (AN EstSSR. Institute of Physics and Astronomy)

SUBMITTED: 08Jun62 DATE ACQ: 11Sep63 ENCL: 00

SUB CODE: CH NO REF SOV: 021 OTHER: 010

Card 2/2

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001961810015-9"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001961810015-9

S/048/62/026/004/008/014
B104/B102

AUTHORS: Lushchik, Ch. B., Lushchik, N. Ye., and Yaek, I. V.

TITLE: Electron oscillation processes in luminescent centers of ionic crystals

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya, v. 26, no. 4, 1962, 488-496

TEXT: On the basis of papers published from 1913 up to the present time, a review has been compiled on the rules governing the electron oscillation processes in ionic crystals. Special attention is devoted to effects involving excited states of impurity centers. Results obtained for alkali-halide crystals activated with Ga^{+}, Ge^{2+}, In^{+}, Sn^{2+}, Sb^{3+}, Tl^{+}, Pb^{2+}, and Bi^{3+}, and also for NaCl, KCl, KBr, and KI crystals activated with indium, gallium, antimony, germanium, and bismuth are discussed. This review article further deals with the steplike dependence of the quantum yield of photo-effects in ionic crystals on the frequency of the

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exciting light. There are 5 figures and 1 table.

ASSOCIATION: Institut fiziki i astronomii Akademii nauk ESSR
(Institute of Physics and Astronomy of the Academy of Sciences Estonskaya SSR)

Card 2/2

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001961810015-9"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001961810015-9

ACCESSION NR: AT4020801 S/2613/63/000/023/0155/0169

AUTHOR: Yaak, I. V.; Okk, M. F.

TITLE: Recombination luminescence spectra of KBr crystals activated with mercury-like ions

SOURCE: AN EstSSR. Institut fiziki i astronomii. Trudy*, no. 23, 1963. Issledovaniya po lyuminestsentsii (Research in luminescence), 155-169

TOPIC TAGS: luminescence, luminescence spectrum, alkali halide luminescence, mercury-like luminescence activator, recombination luminescence, phosphor, crystalline phosphor, thermoluminescence

ABSTRACT: The authors point out that, for the study of the mechanism of recombination luminescence of crystalline phosphors, various optical, electrical and other methods are in use, the majority of which fall into one of two classes: 1) Study of the action of radiation on excited or non-excited phosphors; 2) study of the relaxation characteristics of the phosphors. Various techniques for the study of thermoluminescence are discussed and their relative merits are analyzed. It is noted that the study of thermoluminescence cannot completely replace measurements of "integral" curves of thermal glow, since the restoration of the detailed variation of the sum intensity of thermoluminescence,

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ACCESSION NR: AT4020801

important in a quantitative investigation of the kinetics of the relaxation processes, is difficult and time consuming on the basis of measured spectra. In this article, which is a continuation of the investigation begun in a previous work (I. V. Yaek, M. F. Okk. Trudy* IFA AN ESSR, no. 21, 96, 1962), the authors investigated the recombination luminescence spectra of X-rayed KBr-phosphors. Thermal glow curves and thermoluminescence spectra of Tl^{+}-, In^{+}-, Ga^{+}-, Sn^{2+}- and Pb^{2+}- activated KBr were measured. It was found that the thermoluminescence spectra obtained coincide fairly well with the activator fluorescence spectra. There is a discussion of the limits of applicability of the spectral investigation method of thermal glow. The thermoluminescence characteristics of Sn^{2+}-activated phosphors and those of In- and Ga-activated phosphors were found to be similar. The hypothesis is advanced that this similarity is due to the ability of $Sn^{2+}v^{+}$centers to capture both electrons and holes (v^{+} is a cation vacancy). The reasons for the absence of thallium ion emission during the low-temperature stages of the relaxation process are discussed. "The authors express their gratitude to Ch. B. Lushchik for his supervision of the work." Orig. art. has: 5 figures.

ASSOCIATION: Institut fiziki i astronomii AN EstSSR (Institute of Physics and Astronomy, AN EstSSR)

SUBMITTED: 11Jan63 DATE ACQ: 07Apr64 ENCL: 00

SUB CODE: PH NO REF SOV: 025 OTHER: 002

Card 2/2

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001961810015-9"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001961810015-9

ACCESSION NR: AT4020802 S/2613/63/000/023/0170/0174

AUTHOR: Yaak, I. V.

TITLE: Excitation of impurity centers in alkali halide crystals during electron-hole recombinations

SOURCE: AN EstSSR. Institut fiziki i astronomii. Trudy*, no. 23, 1963. Issledovaniya po lyuminestsentsii (Research in luminescence), 170-174

TOPIC TAGS: luminescence, phosphor, crystalline phosphor, alkali halide, alkali halide luminescence, photoexcitation, impurity excitation, electron vacancy, electron hole recombination, luminescence center activation

ABSTRACT: The author points out that the following are the possible mechanisms of luminescence center excitation in alkali halide crystals: 1) direct photoexcitation of the center; 2) excitation of the center by impact; 3) recombination excitation of the center. The first two mechanisms have already been studied rather well; however, the third mechanism - center excitation as the result of the transmission to it of energy liberated during electron-hole recombinations - has thus far been studied only in general terms. In this article it is established that, as a result of recombination processes, either $3p_1$ states of luminescence centers appear or anions adjacent to Tl^+ are excited. The optical flash spectra

Card 1/2

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ACCESSION NR: AT4020802

(stimulated in the F-band) and thermal glow of KI-Tl, X-rayed at 100K, are compared with its fluorescence spectra excited in different absorption bands. Analogous data relative to KBr-Pb phosphors lead to the conclusion that Pb^{2+} centers assume the $^1P_1$ state as a result of the recombination processes. The author notes that, as a consequence of the lack of experimental data, it is still impossible to indicate the predominant path of the excitation of activator centers in alkali halide crystals with recombination luminescence. "The author is grateful to M. Okk for his help in carrying out the experiment." Orig. art. has: 2 figures.

ASSOCIATION: INSTITUT FIZIKI I ASTRONOMII AN ESTSSR (Institute of Physics and Astronomy)

SUBMITTED: 15Jan63 DATE ACQ: 07Apr64 ENCL: 00

SUB CODE: PH NO REF SOV: 006 OTHER: 002

Card 2/2

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001961810015-9"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001961810015-9

ACCESSION NR: AP5004516

S/0048/65/029/001/0036/0039

SOURCE: AN SSSR. Izvestiya, Seriya fizicheskaya, v.29, no.1, 1965, 36-39

TOPIC TAGS: luminescence, ionic crystal, recombination luminescence, thermolumines cence, radiation effect, self trapping

ABSTRACT: The authors briefly review recent work in their laboratory concerning the role of hole self-trapping in optical phenomena and specifically in recombination luminescence

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001961810015-9

L 32822-65

ACCESSION NR: AP5004516

thermal release of self-trapped holes which, after migrating to Ag^+ centers, make it possible for recombination luminescence to occur even at low temperatures. An intense thermoluminescence peak was [illegible] at 22[illegible]

[illegible] luminescence at activator centers in ionic crystals. Further investigation is desirable to determine whether [illegible]

ASSOCIATION: Institut fiziki i astronomii Akademii nauk EstSSR (Institute of Physics and Astronomy of the Academy of Sciences, Estonian SSR)

SUBMITTED: 00/--Jan65 ENCL: 00 SUB CODE: SS,OP

NR REF SOV: 000 OTHER: 002

Card 2/2

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001961810015-9

L 32817-65 EWT(l)/EWT(m)/EWP(b)/EWP(t) IJP(c) JD/JG
ACCESSION NR: AP5004519 S/0048/65/029/001/0046/0049

AUTHOR: Okk, M.F.; Vaek, I.V.

TITLE: Photostimulated recombination luminescence in activated alkali halide crystals /Report, 12th Conference on Luminescence held in L'vov 30 Jan-5 Feb 1964/

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v.29, no.1, 1965, 46-49

TOPIC TAGS: luminescence, ionic crystal, alkali halide crystal, recombination luminescence, activated crystal

ABSTRACT: The stimulation spectrum for optical flash in a KCl:Tl phosphor that had been irradiated with x rays at 100°C was measured to quantum energies of about 4 eV. Four stimulation bands were found, of which two coincided with the F and K absorption bands and the other two, at 1.85 and 3.3 eV, did not coincide with any know absorption banls. A previously unknown stimulated absorption band at 3.3 eV was found, however, in strongly irradiated KCl:Tl but not in KCl:In. Irradiation of the phosphor with 1.85 eV photons led to decrease in the intensity of the 3.3 eV band and to increase of the absorption in the F band. The temperature dependence

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L 32317-65

ACCESSION NR: AP5004519

of the intensity of optical flash triggered by 3.3 eV photons was found to be similar to that of optical flash stimulated by F band radiation; in particular, the intensity was found to increase rapidly with temperature in the region near 220°K where self-trapped holes are released. In this temperature region the absorption of 3.3 eV photons decreased with increasing temperature. It is concluded that the activator centers involved are electronic and it is hypothesized that they are the long sought atomic Cl^{0} centers analogous to the F centers in KCl:Ag. Optical flash stimulated by radiation in the hold bands, the search which was the original purpose of the investigation, was not found. [orig. art. has: 3 figures.

ASSOCIATION: none

SUBMITTED: 00/--Jan65 ENCL: 00 SUB CODE: SS,OP

NR REF SOV: 006 OTHER: 002

Card 2/2

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001961810015-9

L 2359-66 EWT(1)/EWT(m)/EWP(t)/EWP(b) IJP(c) JD

ACCESSION NR: AT5021780 UR/2613/64/000/028/0121/0127

AUTHORS: Yaek, I. V.; Meriloo, I. A.; Savikhin, F. A.

TITLE: Zinc sulfide phosphor with deep traps

SOURCE: AN EstSSR. Institut fiziki i astronomii. Trudy, no. 28, 1964. Issledovaniya po lyuminestsentsii (Research on luminescence), 121-127

TOPIC TAGS: zinc sulfide, phosphor, emission spectrum, thermoluminescence/ DVS 25 lamp, SF 4 monochromator, SPM 1 monochromator, FEU 18 photomultiplier

ABSTRACT: In order to investigate the deep trap thermoluminescence of zinc sulfide phosphors the authors synthesized ZnS-Bi specimens by mixing luminophosphor zinc-sulfide with 3% $BiCl_3$ activator and 4% LiCl melt. The mixture was annealed for 20 min at 1150C in air and rapidly cooled. The emission and excitation spectra were measured by using two monochromators, and a hydrogen lamp was used for excitation. The thermoluminescence curves showed two temperature peaks at T = 570K and T = 460K. The specimen also showed a single maximum red band at a wavelength of 610 nm. The high temperature thermoluminescence peaks are connected with thermal quenching phenomena as shown in Fig. 1 on the Enclosure. The last intensity drop on these curves occurs around 550K. It is shown that this rather unusual shift to high

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L 2359-66
ACCESSION NR: AT5021780

temperature in ZnS thermal quench properties reveals the existence of deep traps in the material. The authors thank Ch. B. Lushchik for his guidance in this work. Orig. art. has: 3 figures.

ASSOCIATION: Institut fiziki i astronomii, AN EstSSR (Institute of Physics and Astronomy, AN EstSSR)

SUBMITTED: 20Jan64 ENCL: 01 SUB CODE: IC, GC

NO REF SOV: 005 OTHER: 005

Card 2/3

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001961810015-9

L2359-66
AT5021780

ENCLOSURE: 01

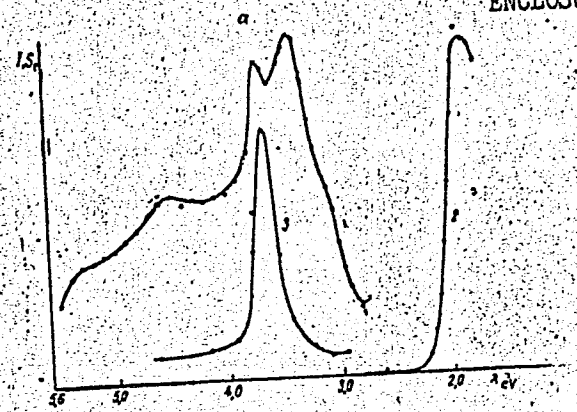

Рис. 1,*а*. Спектры возбуждения (1), излучения (2) и возбуждения термолюминесценции для пика с $T_m = 570°$ K (3) фосфора ZnS-Bi.

Fig. 1a Spectra of excitation, (1) emission, (2) and excitation of thermoluminescence for a peak with $T_m = 570°$K, (3) for phosphorous ZnS-Bi

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001961810015-9

ACC NR: AP7004970 SOURCE CODE: UR/0048/66/030/009/1451/1453

AUTHOR: Kyaombre, Kh.F.; Okk, M.F.; Yaek, I.V.

ORG: Institute of Physics and Astronomy of the EstSSR Academy of Sciences (Institut fiziki i astronomii Akademii nauk EstSSR)

TITLE: Optical and thermal electrons and photostimulated luminescence in KCl:Tl /Report, Fourteenth All-Union Conference on Luminescence (Crystal Phosphors) held at Riga, 16-23 Sept. 1965/

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v. 30, no. 9, 1966, 1451-1453

TOPIC TAGS: luminescent crystal, potassium chloride, thallium, luminescence spectrum, recombination luminescence, temperature dependence, electron energy

ABSTRACT: The authors have extended the investigations of two of them (M.F.Okk and I.V.Yaek, Izv. AN SSSR, Ser. Fiz., 29, 46 (1965)) on photostimulated luminescence in ionic crystals to include stimulation by radiation on the short wavelength side of the F band. The luminescence excitation spectra of x-ray excited KCl:Tl crystals were recorded at 300 and 100° K for stimulating photon energies from 1.6 to 4 eV. Four peaks were observed in the spectra: the F-band peak at 2.2 eV, the K-band peak at 2.75 eV, the Tl^0-band peak at 3.3 eV, and a peak of unknown origin at 3.8 eV. The temperature dependences of the luminescence intensity for stimulation in the F, K, and Tl^0 bands were separately recorded for the temperature range from 80 to 300° K. The

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ACC NR: AP7004970

intensity of the F flash decreased monotonically with decreasing temperature; that of the K flash was almost temperature independent; and the intensity of the Tl^0 flash increased somewhat with decreasing temperature. The temperature independence of the K-flash intensity is in good accord with the findings of H. Kanzaki, T.Ninomiya, and K.Kido (J.Phys. Chem. Sol., 22, 309 (1961)) on photostimulated conductivity. It is concluded from the present results and different findings of other authors that the K flash is recombination luminescence in which true optical (hot) electrons, rather than thermal electrons, participate. The reason for the increase of the Tl^0-flash intensity with decreasing temperature is not known. The authors thank Ch.B.Lushchik for suggesting the topic and discussing the results. Orig. art. has: 2 formulas and 2 figures.

SUB CODE: 20 / SUBM DATE: none / ORIG. REF: 002 / OTH REF: 009

Card 2/2

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001961810015-9"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001961810015-9

YAYES, S.B.

USSR/General Problems of Pathology - Tumors. T-5

Abs Jour : Ref Zhur - Biol., No 4, 1958, 17452

Author : Kostyuk, V.I., Yayes, S.B.
Inst : -
Title : Comparative Evaluation of Treatment of Chronic Leukemias with Urethan, Embichine, Radioactive Phosphorus and X-Ray Irradiation.

Orig Pub : Probl. gematol. i perelivaniya krovi, 1957, 2, No 1, 33-35

Abstract : Embichine therapy given to 15 patients with chronic myelogenous leukemia (CML) and to 8 with chronic lymphatic leukemia (CLL) has shown the efficacy of this method in cases of CML (remission lasting from 1½ to 5 mos.) and its lack in cases of CLL. The value of this method was significantly decreased at times by side effects and complications. The treatment with urethan of 10 patients with CML and two with CLL caused a clinical and hematologic remission not exceeding 5 mos. The treatment with P^{32}

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001961810015-9

USSR/General Problems of Pathology - Tumors. T-5

Abs Jour : Ref Zhur - Biol., No 4, 1958, 17452

(10 with CML and 5 with CLL) has demonstrated the inexpedience of this method, with the exception of those cases that had severe reactions to other methods. X-ray therapy given to 11 patients with CML and 5 with CLL led, in the majority of cases, to 4-13 mos. of remission.

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001961810015-9

PETROV, D.G.; YARS, S.B.

Fourth conference of the Lvov Institute of Blood Transfusion. Probl. gemat. i perel. krovi 3 no.1:60 Ja-F '58. (MIRA 11:3)
(BLOOD--TRANSFUSION)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001961810015-9"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001961810015-9

AKIMOVA, R.N.; KRIVORUCHKO, N.A.; YAES, S.B.; NOVIKOVA-DANTSIGER, T.L.

Effect of transfusion with cationized blood on the hemodynamics, blood proteins, and phagocyte activity of the leukocytes in blood loss. Probl.gemat.i perel.krovi 5 no.6:50-55 Je '60.
(MIRA 13:12)

(HEMORRHAGE) (BLOOD TRANSFUSION) (BLOOD PROTEINS) (PHAGOCYTOSIS)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001961810015-9"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001961810015-9

YAFAROVA, N. B.

"The Elimination of Dysentery Antigens by the Kidneys," Kazan, 1952

W-27086, 25 Jul 53

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001961810015-9"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001961810015-9

YAFAROVA, R. L.

ZIMKIN, Ye.A.; YAFAROVA, R.L.

The minute components of a photographic gelatin. Zhur. nauch. i prikl. fot. i kin. 2 no.5:340-343 S-O '57. (MIRA 10:11)

1. Kazanskiy zhelatinovyy zavod.
(Photographic emulsions)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001961810015-9"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001961810015-9

NEKRASOV, K.D.; SASSA, V.S.; YAFAYEV, I.V.; MAMIOFFE, R.M.; ZOLOTAREVA, O.G.

Refractory concrete for vacuum-distillation furnaces. Ogneupory 28 no.1:26-30 '63. (MIRA 16:1)

1. Nauchno-issledovatel'skiy institut betona i zhelezobetona Akademii stroitel'stva i arkhitektury SSSR (for Nekrasov, Sassa). 2. Podol'skiy zavod tsvetnykh metallov (for Yafayev, Mamioffe, Zolotareva).
(Refractory concrete) (Electric furnaces)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001961810015-9"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001961810015-9

YAFAYEV, L.V.

MAYKOV, A.S.; YAFAYEV, L.V.

Improving the quality of scrap and tailings of aluminum and other nonferrous metals. TSvet.met. 27 no.4:45-49 Jl-Ag '54. (Aluminum)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001961810015-9"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001961810015-9

YAFAYEV, L. V.

BAZILEVSKIY, Viktor Mamertovich; ISTRIN, Mikhail Aleksandrovich; BARTASHEV, Ibor' Leonidovich; LYUBALINA, Soviya L'vovna; REZNIK, Iosif Davydovich; SHPAGIN, A.I., kandidat tekhnicheskikh nauk, retsenzent; VISSARIONOV, B.G., inzhener, retsenzent; KRASHENINNIKOV, S.S., retsenzent; FEL'DMAN, I.Ye., retsenzent; YAFAYEV, L.V., retsenzent; KOMAYEVA, O.M., redaktor izdatel'stva; MIKHAYLOVA, V.V., tekhnicheskiy redaktor

[Secondary nonferrous metals; a reference manual] Vtorichnye tsvetnye metally; spravochnik. Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po chernoi i tsvetnoi metallurgii. Pt.3. [Metallurgy of copper and lead] Metallurgiia medi i svintsa. 1957. 544 p. (MLRA 10:3)
(Copper--Metallurgy) (Lead--Metallurgy)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001961810015-9"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001961810015-9

YAFAYEV, L.V.

"The Basic Trends in Raising the Quality of Secondary Aluminum Base Alloys."

report presented at the Scientific Technical Conference of Workers in Secondary Non-ferrous Metallurgy, Khar'kov, 25-27 January 1961.

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001961810015-9"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001961810015-9

S/131/63/000/001/002/004
B117/B101

AUTHORS: Nekrasov, K. D., Sassa, V. S., Yafayev, I. V., Mamioffe, R. M., Zolotareva, O. G.

TITLE: Refractory concrete for vacuum distillation furnaces

PERIODICAL: Ogneupory, no. 1, 1963, 26 - 30

TEXT: For the lining of induction furnaces used to remove zinc from aluminum alloys a refractory concrete of the following composition is proposed: water glass diluted with water; finely ground magnesite-periclase, mixed with sodium fluo-silicate; fine- and coarse-grained chamotte as filler. Characteristics of the dried concrete: compression strength 250 - 350 kg/cm^2; refractoriness up to 1450°C; deformation temperatures at 2 kg/cm^2 load: softening point 1220°C; 4% shrinkage at 1320°C; destruction at 1450°C. Thirty changes of the temperature reduce the compression strength of the concrete by 50 - 60% when heated up to 850°C. When heated to 1200°C and cooled in water the concrete suffers 25% destruction after five temperature changes. When heated up to 1100°C the compression strength

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Refractory concrete for...

is 200 - 250 kg/cm^2 and the thermal expansion 0.64%. Operational tests with the new material at the Podol'skiy zavod tsvetnykh metallov (Podol'sk Plant for Nonferrous Metals) showed the following advantages as compared with magnesite bricks and rammed lining: it took 40 days to line and dry a vacuum distilling furnace, which is a 25% reduction of the usual repair work. After 20 months operation the concrete had become soaked with metal to a depth of 20 - 40 mm only, whereas magnesite bricks and rammed lining were completely soaked with metal after 12 - 13 months only. After 20 months the compression strength was 100 - 120 kg/cm^2. Some places showed cracks of up to 0.5 mm width and 50 - 60 mm depth filled with metal, which is a disadvantage of the new material. Its high strength has the following causes: magnesite and water glass surround the particles of porous chamotte with a chemically stable coat which prevents impregnation of the concrete by metal. The concrete is protected against penetration of the melt into deeper layers by a crust of new formations up to 8 mm thick. By the lining of vacuum distillation furnaces with the new concrete thus the Podol'sk Plant for Nonferrous Metals is saving of 13,000 rubles a year. There are 4 figures.

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APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001961810015-9"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001961810015-9

Refractory concrete for... S/131/63/000/001/002/004
B117/B101

ASSOCIATION: NII betona i zhelezobetona ASiA SSSR (Nekrasov, Sassa) (Scientific Research Institute of Concrete and Reinforced Concrete of the Academy of Construction and Architecture USSR); Podol'skiy zavod tsvetnykh metallov (Yafayev, Mamioffe, Zolotareva) (Podol'sk Plant for Nonferrous Metals)

Card 3/3

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001961810015-9"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001961810015-9

YAFAROVA-TUMASHEVA, N. B.

"Secretion of Dysentery Antigens by the Kidneys of Rabbits," Cand Med Sci, Kazan' State Medical Inst, Kazan', 1953. (RZhBiol, No 1, Sep 54)

SO: Sum 432, 29 Mar 55

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001961810015-9"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001961810015-9

24' (7)

AUTHORS: Vinokurov, V. M., Zaripov, M. M., Yafayev, N. R. SOV/56-37-1-54/64

TITLE: The Fine Structure of the Paramagnetic Resonance Spectrum of Natural Sapphire (Tonkaya struktura spektra paramagnitnogo rezonansa yestestvennogo sapfira)

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1959, Vol 37, Nr 1, pp 312 - 313 (USSR)

APSTRACT: The authors investigated the paramagnetic resonance spectrum of some natural sapphire crystals at room temperature within the frequency range of 9600 - 9200 megacycles, and tell of the results obtained in the present "Letter to the Editor". The blackish-blue color of the sapphire was caused by Fe^{3+}- and Ti^{3+}-ions, which substituted the Al^{3+} amorphously in corundum. Because of the short spin-lattice relaxation times, the Ti^{3+}-ions give no effect at room temperature, for which reason it is assumed that such an effect is due to the Fe^{3+}-ions, which was confirmed by the present investigation. Korniyenko and Prokhorov (Ref 2) already carried out an investigation of the fine struc-

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ture of the paramagnetic electron resonance spectrum of Fe^{3+}-ions in the Al_2O_3-lattice, and showed that the spectrum observed is possible as a result of the here given Hamiltonian (1). By basing upon these and using other results of reference 2, the authors theoretically investigated the paramagnetic resonance spectrum of sapphire and numerically computed the constants of the Hamiltonian (1), g, |D|, |a-F| and |a|; they found it to agree within the error limits with those of the Fe^{3+}-ions (Ref 2) introduced artificially into Al_2O_3. Also the splitting up of Fe^{3}-resonance lines found in reference 3 was likewise found in the sapphire crystals. There are 2 figures and 2 Soviet references.

ASSOCIATION: Kazanskiy gosudarstvennyy universitet (Kazan' State University)

SUBMITTED: March 28, 1959

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001961810015-9"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001961810015-9

38916

24.7900

S/181/62/004/006/023/051
B104/B112

AUTHORS: Yafayev, N. R., and Yablokov, Yu. V.

TITLE: Paramagnetic electron resonance of Ti^{3+} in some silicate and phosphate glasses

PERIODICAL: Fizika tverdogo tela, v. 4, no. 6, 1962, 1529 - 1534

TEXT: The paramagnetic electron resonance in silicate, phosphate, and borate glasses, to which were added K_2O, Na_2O, and Li_2O one after another, was investigated for 9330 and 458 Mc/sec at temperatures of 300 and 77°K. All samples contained 1 to 5 mole% TiO_2. To obtain Ti^{3+} ions in the glasses, the latter were boiled with a smoking flame under strongly reducing conditions. To each charge were added carbonates of alkali metals and carbon in quantities of about 0.5% by weight. Conclusions: The borate glasses contained no trivalent Ti ions. In the silicate and phosphate glasses, the Ti^{3+} ions are surrounded by nitrogen octahedra distorted in different degrees. The distortions possess a trigonal nature. The symmetries of the surroundings of the

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Ti^{3+} ions have one and the same character. However, the splitting of the orbital triplet in the phosphate glasses is larger than in the silicate glasses. In the silicate glasses, the splitting is largest when the Li^+ ions are replaced by Na^+ ions, and the Na^+ ions by K^+ ions. A similar dependence of the splitting in phosphate glasses could not be observed. If potassium is replaced by lithium and sodium, the Ti^{3+} concentration in the glasses decreases. The results agree with the data of studies on absorption spectra in the visible region. There are 1 figure and 1 table.

ASSOCIATION: Leningradskiy gosudarstvennyy opticheskiy institut im. S. I. Vavilova (Leningrad State Optical Institute imeni S. I. Vavilov). Fiziko-tekhnicheskiy institut Kazanskiy filial AN SSSR (Physicotechnical Institute of the Kazan' Branch AS USSR)

SUBMITTED: January 25, 1962

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001961810015-9"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001961810015-9

S/056/62/043/005/054/058
B125/B104

AUTHORS: Garif'yanov, N. S., Yafayev, N. R.

TITLE: The paramagnetic electron resonance of Zr^{3+} in glass bodies.

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 43, no. 5(11), 1962, 1978-1979

TEXT: The method of paramagnetic electron resonance (450 and 9320 mc/sec) was used to investigate silicate glass bodies containing Zr^{3+} ($20Na_2O.70\ SiO_2 \cdot 10ZrO_2$) in mol%) at 77 and 295°K. The narrow and symmetric line of the glass bodies investigated at 450 Mc/sec and 77°K has the spectroscopic splitting factor $g = 1.89 + 0.01$ and the width $\delta H = 5$ oe. The line width increases monotonically as the temperature rises from 77 to 295°K, at which value a signal of the paramagnetic electron resonance ceased to be observed. A broad and symmetric line of the paramagnetic electron resonance with $g_{eff} = 1.906 \pm 0.002$ and $\delta H = 126 \pm 6$ oe was observed at the frequency 9320 Mc/sec at 77°K. It is assumed that in the glass specimens investigated the magnetic ion Zr^{3+} has an octhahedral

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B125/B104

The paramagnetic electron resonance .. surrounding which is formed by 6 oxygen ions. The $Zr^{3+}(4d^1, S=1/2)$ energy levels are similar to the $Ti^{3+}(3d^1, S=1/2)$ levels. The fivefold degenerate orbital level of these ions is split into a lower triplet and an upper doublet by the octahedral field of the Zr^{3+} ions. The width of the line having the frequency $\nu = 450$ Mc/sec of the paramagnetic electron resonance can be explained by the relaxation mechanism of Van Vleck. In addition to that mechanism the shape and width of the line having 9320 MC/sec are due to the anisotropy of the g-factor and to various strong distortions of the oxygen octahedron. The line with 9320 Mc/sec arises from the superposition of many lines having various g-factors and can be described by a spin-Hamiltonian of the form

$$\hat{H} = \sum_i (g_{xi}\beta H_x \hat{S}_x + g_{yi}\beta H_y \hat{S}_y + g_{zi}\beta H_z \hat{S}_z.$$ The line of the paramagnetic resonance of Zr^{91} showed no hyperfine structure.

ASSOCIATION: Fiziko-tekhnicheskiy institut Kazanskogo filiala Akademii nauk SSSR (Physicotechnical Institute of the Kazan' Branch of the Academy of Sciences USSR)

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001961810015-9

The paramagnetic electron resonance ...

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B125/B104

SUBMITTED: August 4, 1962

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APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001961810015-9"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001961810015-9

L 18578-63 EWT(1)/EWP(q)/EWT(m)/BDS/EEC(b)-2 AFFTC/ASD/ESD-3/IJP(C)
Pi-4/Pq-4 GG/JD/WH/JG

ACCESSION NR: AP3001289 S/0181/63/005/006/1673/1677

AUTHORS: Yafayev, N. R.; Garif'yanov, N. S.; Yablokov, Yu. V. 78 77

TITLE: Electron paramagnetic resonance of W sup 5+ ions in glass 15

SOURCE: Fizika tverdogo tela, v. 5, no. 6, 1963, 1673-1677 21

TOPIC TAGS: electron paramagnetic resonance, W, glass, silicate glass, phosphate glass, g-factor, hyperfine structure, silica tetrahedron

ABSTRACT: The electron paramagnetic resonance of pentavalent W 27 ions was studied in silicate and phosphate glasses at frequencies of 9320 and 440 megacycles and at temperatures of 295 and 77K. At the low frequency and low temperature all specimens displayed narrow symmetrical lines with a g-factor of about 1.6, the shape of the lines being approximately gaussian. With gradual elevation of temperature the lines grew constantly broader and the position of maximum absorption did not change. At the high frequency and at 77K, broad, almost symmetrical, lines were obtained in silicate glasses, but narrower and more asymmetrical lines were found in phosphate glasses. The shapes of the lines and the values of the g-factors did not change for silicate glasses on attaining room temperature. In the phosphate glasses, however, the lines grew broader on

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L 18578-63

ACCESSION NR: AP3001289

the rise in temperature, and the asymmetry became less clearly defined. These results are explained on the assumption that the W ions are located within the silica tetrahedrons. But more experimental work is needed to determine the position precisely. At the 440 megacycle frequency hyperfine structure was detected from the W^{183} isotope. In the glasses examined by the authors the signal of electron magnetic resonance was observed only from pentavalent W, which has an electron spin of $\frac{1}{2}$. For other paramagnetic ions of W having a spin greater than $\frac{1}{2}$, the lines of electron paramagnetic resonance in glasses should be blurred by the fine structure. Orig. art. has: 2 figures, 1 table, and 1 equation.

ASSOCIATION: Gosudarstvenny*y opticheskiy institut im. S. I. Vavilova, Leningrad (State Optical Institute)

SUBMITTED: 04Feb63 DATE ACQ: 01Jul63 ENCL: 00

SUB CODE: PH NO REF SOV: 004 OTHER: 005

Card 2/2

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001961810015-9"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001961810015-9

YAFAYEV, N.R.; GARIF'YANOV, N.S.

Electron paramagnetic resonance of Nb^{4+} ions in silicate glasses. Fiz. tver. tela 5 no.10:3025-3026 O '63. (MIRA 16:11)

1. Gosudarstvennyy opticheskiy institut im. S.I. Vavilova, Leningrad.

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001961810015-9"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001961810015-9

YAFAYEV, N. R.

"Application of the electron paramagnetic resonance of ions of transition metals to studying some problems of glass structure."

report submitted for 4th All-Union Conf on Structure of Glass, Leningrad, 16-21 Mar 64.

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001961810015-9"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001961810015-9

YAFAYEV, R.Kh.

Immunologic properties of Shigella sonnei in experimental conditions; immunization of rabbits and passive immunization of white mice. Zhur.mikrobiol.epid.i immun. no.8:38-42 Ag '54. (MLRA 7:9)

1. Iz Voyenno-meditsinskoy akademii imeni Kirova.
(VACCINES AND VACCINATION,
*dysentery vacc., immun. of rabbits & white mice)
(DYSENTERY BACILLARY, immunology,
*vacc., immun. of rabbits & white mice)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001961810015-9"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001961810015-9

YAFAYEV, R.Kh.

Immunological characteristics of Shigella sonnei in an experiment on white mice. Zhur.mikrobiol.epid.i immun. no.3:43-49 Mr '55. (MLRA 8:7)

1. Iz kafedry epidemiologii s dizinfektsiyey (nach. prof. G.A. Znamenskiy) Voyenno-meditsinskoy akademii imeni S.M.Kirova.

(VACCINES AND VACCINATION,
dysenterial vacc., immun. properties of vacc. prep. from Shigella sonnei in white mice).

(DYSENTERY, BACILLARY, immunology,
vacc. from Shigella sonnei, immun. properties in white mice)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001961810015-9"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001961810015-9

YAFAYEV, R.Kh.

"Influenza," edited by N.I. Morozkin. Reviewed by R.Kh. IAfaev.
Zhur.mikrobiol.epid.i immun. 30 no.7:139-141 Jl '59. (MIRA 12:11)
(INFLUENZA) (MOROZKIN, N.I.)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001961810015-9"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001961810015-9

SIROKO, A.L., prof. [deceased]; YAFAYEV, R.Kh., kand.meditsinskikh nauk;
ADAMOV, A.K., kand.meditsinskikh nauk

Agglomeration reaction of carbon serum. Vest. AMN SSSR 15 no. 5:23-33 '60. (MIRA 14:2)

1. Voyenno-meditsinskaya ordena Lenina akademiya im. S.M. Kirova.
(BACTERIOLOGY—TECHNIQUE) (CARBON, ACTIVATED)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001961810015-9"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001961810015-9

YAFAYEV, R.Kh., dotsent

"Medical theories on influenza" by V.M.Zhdanov, V.D.Solov'ev, F.G. Epshtein. Reviewed by R.Kh. IAfaev. Zhur. mikrobiol. epid i immun. 31 no.6:138-140 Je '60. (MIRA 13:8)
(INFLUENZA) (ZHDANOV, V.M.) (SOLOV'EV, V.D.)
(EPSHTEIN, F.G.)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001961810015-9"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001961810015-9

YAFAYEV, R.Kh.; DOKUCHAYEV, G.M.

Specific seroprophylaxis for influenza in an organized group. Vop. virus. 6 no.5:627-628 S-O '61. (MIRA 15:1)
(INFLUENZA)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001961810015-9"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001961810015-9

YAFAYEV, R.Kh.; DOKUCHAYEV, G.M.; OGNEVA, L.A.

Active immunization against influenza in organized groups during the 1959 epidemic. Vop. virus. 6 no.5:630 S-O '61. (MIRA 15:1)
(INFLUENZA)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001961810015-9"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001961810015-9

BELYAKOV, V.D.; YAFAYEV, R.Kh.

"Essays on the theory of epidemiology" by I.I.Elkin. Reviewed by V.D.Beliakov, R.Kh. IAfaev. Zhur.mikrobiol., epid. i immun. 32 no.10:138-140 O '61. (MIRA 14:10)
(EPIDEMIOLOGY) (ELKIN, I.I.)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001961810015-9"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001961810015-9

YAFAYEV, R.Kh.; CHEPELEV, S.A.

Use of the reaction of indirect hemagglutination in the determining the amount of botulin in sausage products. Zhur.mikrobiol., epid. i immun. 32 no.11:21-25 N '61. (MIRA 14:11)

1. Iz kafedry epidemiologii s dezinfektsiyey Voyenno-meditsinskoy ordena Lenina akademii imeni S.M.Kirova.
(BLOOD--AGGLUTINATION) (BOTULISM)
(SAUSAGES--MICROBIOLOGY)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001961810015-9"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001961810015-9

ROGOZIN, I.I., prof., red.; YAFAYEV, R.Kh., kand. med. nauk, red.; BELYAKOV, V.D., kand. med. nauk, red.; BOLOTOVSKIY, V.M., red.

[Selected problems of epidemiology] Izbrannye voprosy epidemiologii. Moskva, Meditsina, 1964. 335 p. (MIRA 17:6)

1. Chlen-korrespondent AMN SSSR (for Rogozin).

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001961810015-9"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001961810015-9

YAFAYEV, R.Kh.

Detection of plague and tularemia infection in rodents. Zhur. mikrobiol., epid. i immun. 40 no.9:93-96 S'63. (MIRA 17:5)

1. Iz Voyenno-meditsinskoy ordena Lenina akademii imeni S.M. Kirova.

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001961810015-9"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001961810015-9

YAFAYEV, R.Kh.

Differentiation between Pasteurella pestis and P. pseudotuberculosis in rodents. Zhur. mikrobiol. epid. i immun. 40 no.5:23-26 My '63. (MIRA 17:6)

1. Iz Voyenno-meditsinskoy ordena Lenina akademii imeni Kirova.

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001961810015-9"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001961810015-9

KUERYAVTSEV, G.V.; NOVITSKIY, V.Ye.; YAFAYEV, R.Kh.

Carbon agglomeration reaction (carbo-test) in the diagnosis of infectious nonspecific polyarthritis. Vop. revm. 3 no.3: 63-67 Jl-S '63 (MIRA 17:3)

1. Iz kliniki fakul'tetskoy terapii (nachal'nik - prof. V.A. Beyyer) i kafedry epidemiologii (nachal'nik - prof. I.I. Rogozin) Voyenno-meditsinskoy ordena Lenina akademii imeni S.M.Kirova.

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001961810015-9"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001961810015-9

L 34067-65 EPA(s)-2/EWT(m)/EPA(bb)-2/EWP(b)/T/EWA(d)/EWP(w)/EWP(t) Pt-10/Pad IJP(c) JD/HW

ACCESSION NR: AP5005099 S/0129/65/000/002/0027/0028

AUTHOR: Karmanova, Ye. G.; Beloruchev, L. V.; Yafayeva, S. P.; Kuleshova, V. D.

TITLE: Brittleness in permendur type alloys

SOURCE: Metallovedeniye i termicheskaya obrabotka metallov, no. 2, 1965, 27-28

TOPIC TAGS: iron alloy, cobalt alloy, alloy brittleness, permendur alloy, alloy heat treatment, alloy mechanical property

ABSTRACT: Using permendur-type alloys (Fe-Co alloys), the authors attempted to establish the transition temperatures of the α-solid solution from a brittle to a nonbrittle state during cooling and heating. The determination of these temperatures is important for establishing the optimal conditions for producing bands of these alloys by the coiling method. The experiments were carried out on band specimens 0.2 mm thick rolled from billets of different melts, the compositions of which are given in a table. Specimens of this band 100 mm long were used to determine the temperature, upon heating to which brittleness is eliminated after rapid cooling. To produce a brittle state these specimens were heated in a vacuum furnace to 820-830C for 5 hrs. and cooled at a rate of 50 deg/hr. The number of bends to fracture was 5, compared to 121 after cold rolling but before annealing.

Card 1/2

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ACCESSION NR: AP5005099 3

The specimens were then heated in a salt bath to various temperatures, held 5 min., and rapidly cooled in cold salt water, then bend tested. The results of bend testing varied from 6 bends to fracture at 710C to 224 bends at 700C, with a decrease to 147 bends at 800C. To determine the temperature of the development of brittleness during cooling, the specimens were heated to 820-830C, quickly transferred for partial cooling to isothermal media of various temperatures, held 2 min., then plunged into cold water, and bend tested. The results fluctuated from 70 bends to fracture at 750C, 160 at 720C, 63 at 700C, 90 at 680 and 660C, and only two bends at 640 and 620C. Hence, the temperature corresponding to the development of brittleness on heating was 660C and the temperature corresponding to the development of brittleness on cooling was 640C. The processes causing brittleness occurred rapidly but abrupt quenching in water slowed them down, thus preserving a sufficient ductility of the alloy. Orig. art. has: 2 tables.

ASSOCIATION: Severo-zapadnyy zaochnyy politekhnicheskiy institute (Northwestern polytechnic correspondence institute); Leningradskiy staleprokatnyy zavod (Leningrad steel rolling plant)

SUBMITTED: 00 ENCL: 00 SUB CODE: MM

NO REF SOV: 000 OTHER: 003

Card 2/2

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001961810015-9"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001961810015-9

YAFAYEVA, V.B.; VALEYEV, A.S.

Band interference light-filters. Opt. i spektr. 17 no.1:102-112 Jl '64. (MIRA 17:9)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001961810015-9"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001961810015-9

ACCESSION NR: AP4042986 S/0051/64/017/001/0102/0112

AUTHORS: Yafayeva, V. B.; Valeyev, A. S.

TITLE: Interference optical band filters

SOURCE: Optika i spektroskopiya, v. 17, no. 1, 1964, 102-112

TOPIC TAGS: light interference, light filter, band spectrum, dielectric coating, optical transmission

ABSTRACT: The use of multilayered dielectric coatings for the construction of optical filters that transmit a limited band of the spectrum is considered. The analysis is limited to narrow-band filters made up of alternating quarter-wave layers with large and small refractive indices, respectively. General equations are derived for the transmission coefficient and bandwidth of such a filter by a method which can be generalized to include coatings made up of layers of more than two substances. Results of electronic-computer

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001961810015-9

ACCESSION NR: AP4042986

calculations based on this method are presented for several concrete filters and are shown to be in good agreement with the experimental results. Orig. art. has: 7 figures, 5 formulas, and two tables.

ASSOCIATION: None

SUBMITTED: 31Aug63 ENCL: 00

SUB CODE: OP NR REF SOV: 003 OTHER: 005

Card 2/2

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001961810015-9"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001961810015-9

YAFAYEVA, Z.Sh., mladshiy nauchnyy sotrudnik

Luminescent method for determining the viability of caterpillars of the gypsy moth. Zashch. rast. ot vred. i bol. 5 no.9:45-46 S '60. (MIRA 15:6)

1. Institut biologii Bashkirskogo filiala AN SSSR, g. Ufa.
(Gypsy moth)

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RATS, V.G.; YAFET, G.M.

Automatic press molding line at the Kirov plant. Lit. proizv. no.1:12-16 Ja '62. (MIRA 16:8)

(Foundries—Equipment and supplies)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001961810015-9"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001961810015-9

YAFEYEV, R.Kh.

Adsorption reaction of carbon agglomeration. Zhur. mikrobiol., epid. i immun. 40 no.10:33-38 O '63. (MIRA 17:6)

1. Iz Voyenno-meditsinskoy ordena Lenina akademii imeni Kirova.

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001961810015-9"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001961810015-9

YAFFE, G.

Yaffe, G.: "Shelter-belt planting and the fodder supply for livestock", Myas. industriya, 1949, No. 1, p. 77-80

SO: U-3042, 11 March 53, (Letopis 'nykh Statey, No. 10, 1949).

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001961810015-9

YAFIMOV, P.I., kand. tekhn. nauk

Preliminary calculation of the accuracy of the elements in a triangulation series. Sbor. nauch. trud. KGRI no.10:146-150 '61 (MIRA 17:8)

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001961810015-9

S/194/61/000/012/071/097
D273/D301

AUTHORS: Kanavalay, Ya. R. and Yafremay, V. I.

TITLE: Influence of ultrasonic oscillations on the toughness and plasticity of brass

PERIODICAL: Referativnyy zhurnal, Avtomatika i radioelektronika, no. 12, 1961, 16, abstract 12E91 (Vestsi AN BSSR, Ser. fiz.-tekhn. n. 1960, no. 4, 93-98)

TEXT: The influence of ultrasound on the toughness and plasticity of 2-phase brass tape Л59 (L59) was studied. The experiments made use of a tube ultrasonic generator, together with a Г412 (G412) tube in the first cascade and 2 parallel switching valves ГК71 (GK71) in the second. The output power of the generator was 300 volts. Launching of the ultrasound was done by a magnetostrictor with a triple rod assembly to which was joined a step concentrator. The concentrator had a reinforcing flange at the nodal plane and was fixed to the vibrator by a special nut of the same material, soldered to the assembly by brass solder. The plane of the joint

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Influence of ultrasonic ...

was polished. The fixing was carried out using a small tack. The vibrator was enclosed in a steel cylinder and fastened to it by a flange. Cooling the cylinder was effected by running water. The acoustic head was protected from the vibrations of the chopper by some sponge on the upper part. At the lower end, the concentrator end was soldered to the studied sample (brass wire of diameter 1 mm). The amplitude of the oscillations was measured with a microscope. After sounding and without unsoldering from the concentrator, the sample was discharged at room temperature. The sounding took place at 34 Kc/s at an amplitude of 0.0125 mm. Results of the experiment are given. The ultrasonic oscillations cause a simultaneous decrease in toughness and plasticity of the brass; thus after 15 seconds of sounding the toughness was reduced by 9% and the relative elongation decreased by 50%; when sounding lasted more than 15 seconds, the sample was destroyed. Ultrasound causes a lowering of all the characteristics of static toughness of brass and a decrease in the work needed to cause destruction of the sample. Sounding in amorphous brass leaves the toughness and plasticity

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practically unchanged. The suggestion is made that lowering the toughness of brass as a consequence of sounding is connected with the transition of the metal in the stable state, and the simultaneous decrease in plasticity, and with the shattering of the crystal structure. The hypothesis is argued upon that the toughness of brass decreases as a consequence of the lowering of temperature with sounding time. 3 figures. 3 tables. 9 references. / Abstractor's note: Complete translation. /

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001961810015-9

SOV/81-59-5-15977

5.2400(A)

Translation from: Referativnyy zhurnal, Khimiya, 1959, Nr 5, p 327 (USSR)

AUTHORS: Mikulinskiy, A.S., Yakunchikov, V.N., Val'shchikov, V.I., Yafremkin, V.V.

TITLE: The Refining of Amorphous Boron by Oxidation Burning in a "Fluidized Bed"

PERIODICAL: Tr. Ural'skogo n.-i. khim. in-ta, 1957 (1958), Nr 5, pp 206-210

ABSTRACT: The possibility is investigated of refining amorphous boron (AB) by means of oxidation burning in a fluidized bed (FB). Weighed portions (4 - 36 g) of AB, containing 85% of total B and 11% Mg, were placed in a chamotte crucible and air was blown in through the bottom of the crucible with a rate of 20 - 35 l/min, at a temperature of 20 to 400°C, and a burning time of 30 - 95 minutes. When the reaction zone (RZ) of the furnace was heated up due to the hot air, a thermal gradient of 120 - 140°C was observed over the porous bottom and in the mass of the product, which brings

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B-523

SOV/81-59-5-15977

The Refining of Amorphous Boron by Oxidation Burning in a "Fluidized Bed"

about the ignition of the product. By installing a separate heater of the RZ, the self-ignition was eliminated. At a temperature of 540 - 560°C of the FB, the obtained product contained 94 - 95% of total B and 2.7 - 3.3% Mg.

V. Shatskiy

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YAGADIN, G.A.; ORLOV, K.V.

Investigating the separation of zirconium and hafnium on anionites. Izv. vys. ucheb. zav.; tsvet. met. 4 no.2:92-96 '61. (MIRA 14:6)

1. Moskovskiy khimiko-tekhnologicheskiy institut, kafedra tekhnologii redkikh elementov.
(Zirconium--Electrometallurgy)
(Hafnium--Electrometallurgy)

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001961810015-9

YAGAFAROV, E. (g.Ufa, ul.Bogdana Khmel'nitskogo, d.27, kv.8),
DEREVYANKO, inzh (g.Makeyevka)

Suggested, created, introduced. Izobr.i rats. no.2:28-29 F '61.
(MIRA 14:2)

(Technological innovations)

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001961810015-9

KHOSENKO, G. (g.Zhigulevsk); SHILOV, P.; YAGAFAROV, G. (Krasnoborskiy rayon, Tatarskoy ASSR); YUR'YEV, K. (UA1BO); RUNOVSKIY, A. (Gomel', UC2-2243)

Passages from some letters. Radio no.3:16 Mr '61. (MIRA 14:8) (Radio)

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001961810015-9

BAIANDIN, A.D.; YUDAYEV, K.V.; MUSATOVA, G.; YAGAFAROV, L.M.

Cytology of vaginal smears during pregnancy, labor, and puerperium. Akush. gin. no. 1:42-44 Jan-Feb 1953. (CIML 24:2)

1. Students. 2. Of the Department of Obstetrics and Gynecology (Head -- Prof. B. Ya. Stavskaya), Stavropol' Medical Institute.

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