AUTHOR: Gavrilov, E.F. SOV/51-7-3-13/21

TITLE: Luminescence of Lithium Hydride

PERIODICAL: Optika i spektroskopiya, 1959, Vol 7, Nr 3, pp 371-375 (USSR)

ABSTRACT: Lithium hydride crystals should be colourless and transparent. Under the action of light and heat the crystals become either blue or blue grey. They may also become coloured in the process of preparation ("additive" coloration). The author found that the additively and photochemically coloured lithium hydride crystals strongly luminesced when excited with light from a mercury lamp. The luminescence was predominantly orange-red in colour. The crystals were of 2-5 mm dimensions and all operations with them were carried out in an atmosphere of chemically pure argon. The luminescence spectra were recorded in the visible and infrared regions by means of an ISP-51 spectrograph. A mercury lamp PRK-4 (365 mμ) was used as the source. The luminescence spectra of LiH were found to consist of three bands with maxima at 5970, 6550 and 7180 Å (Fig 1). The 5970 Å maximum is clearest in crystals whose luminescence is orange-red in colour. The crystals with bright red luminescence had a maximum at 6550 Å. Infrared luminescence was intense, especially in crystals with dark-red emission. The author studied also temperature

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quenching of the LiH luminescence. For this purpose he used powders and again all the operations were carried out in an atmosphere of nitrogen. The temperature quenching (Figs 2,3) was found to obey a formula first suggested by Gurney and Mott (Ref 1):

$$\eta = \frac{1}{1 + C.e^{-U/kT}} \quad . \qquad (1)$$

Chemical analysis showed that the luminescent crystals of lithium hydride differed from the non-luminescent ones by the presence of a small amount (about 0.4%) of excess lithium and some impurities (Na, Mg, Cu and Si). It is suggested that luminescence of lithium hydride is due to the excess lithium. Other impurities help in formation of lithium emission centres by promoting the process of dissociation of LiH. Acknowledgments are made to M.I. Fedorovskaya and N.K. Yakhimovich for their help in carrying out experiments. There are 4 figures, 1 table and 7 references, 4 of which are Soviet, 2 English and 1 French.

SUBMITTED: December 11, 1958

S/032/60/026/05/20/063
B010/B005

5.5310

AUTHORS: Gavrilov, F. F., Fedorovskaya, M. I., Yakhimovich, N. K.

TITLE: Determination of Hafnium in Zirconium by the Spectral Method

PERIODICAL: Zavodskaya laboratoriya, 1960, Vol. 26, No. 5, pp. 563-56.

TEXT: The spectral methods for the determination of hafnium in zirconium described in publications (Table, data of three publications) have a maximum sensitivity of 0.002%. The authors of this paper describe a spectral method permitting determinations in a range from $4 \cdot 10^{-4}$ to $4 \cdot 10^{-2}$% of Hf. Calibration samples were prepared of spectrometrically pure zirconium oxide (with a maximum of $2 \cdot 10^{-4}$% of Hf) and of hafnium oxide made of chemically pure hafnium chloride (with 0.136% of Zr). Six calibration samples of the following composition were obtained: 0.04, 0.013, 0.005, 0.002, 0.0008, and 0.0004% of Hf. An ISP-22 spectrograph was used, and the spectrum was excited with an a.c. arc (5 a). Carbon bars of the Kudinovskiy zavod (Kudinovskiy Works) were

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Determination of Hafnium in Zirconium by the Spectral Method

S/032/60/026/05/20/063
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used as electrodes. The analytical line pairs Zr II 2568, 873 A, and Hf II 2641, 406 A were applied. The calibration diagram obtained is shown. Analyses of the calibration samples with 0.0008% of Hf showed that the hafnium concentration which can be determined by the method described lies in the range between 0.0011 and 0.0007%. There are 1 figure, 1 table, and 4 references, 3 of which are Soviet.

Card 2/2

55310

32628
S/137/61/000/011/116/123
A060/A123

AUTHORS: Gavrilov, F.F., Fedorovskaya, M.I., Yakhimovich, N.K.

TITLE: Determination of hafnium in zirconium by the spectral method

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 11, 1961, 9, abstract 11K53; ("Tr. Ural'skogo politekhnich. in-ta", 1961, coll. 114, 161 - 164)

TEXT: The analysis is carried out on the spectrograph ИСП-22 (ISP-22) with three-condenser lens system. The width of the spectrograph slit is 0.030 mm. The spectra are excited in an ac arc with 5-ampere current. Spectrally pure carbon rods serve as electrodes. A sample or a standard specimen 10 mg in weight is mixed with the carbon powder in the ratio 1:1 and is poured into the cup of the lower electrode. Zr II 2568.873 and Hf II 2641.406 are used as the analytic pair of spectral lines. The mean square error in the determination of Hf in Zr with concentration of $8 \cdot 10^{-4}$% is equal to 5%. The high sensitivity of the method is accounted for by the low background noise in the AC arc. See also Referativnyy zhurnal, Metallurgiya, 1960, no. 11, 27873.

Card 1/2

L. Vorob'yeva

32628
S/137/61/000/011/116/123
A060/A101

Determination of hafnium.....

[Abstracter's note: Complete translation]

Card 2/2

GAVRILOV, F.F.; FEDOROVSKAYA, M.I.; YAKHIMOVICH, N.K.

Spectral method for determining hafnium in zirconium. Trudy Ural.politekh.inst. no.14:161-164 '61. (MIRA 16:6)
(Zirconium--Spectra) (Hafnium--Spectra)

GAVRILOV, F.F.; VORONEZHSKAYA, I.A.; FEDOROVSKAYA, M.I.

Spectral analysis of tungsten by the evaporation method. Trudy Ural. politekh.inst.no.121:95-101 '62.

(MIRA 16:5)

(Tungsten--Spectra)

L 19368-63 EWT(1)/BDS/EEC(b)-2/ES(w)-2 AFFTC/ASD/ESD-3/IJP(C)/
SSD Pi-4/Po-4/Pab-4
ACCESSION NR: AR3006964 S/0058/63/000/008/G007/G007

SOURCE: RZh. Fizika, Abs. 8G40

75

AUTHOR: Gavrilov, F. F.

TITLE: Concerning the mechanism of excitation of atoms in gas-discharge tubes with hollow cathodes

CITED SOURCE: Tr. Ural'skogo politekhn. in-ta, sb. 123, 1962, 26-32

TOPIC TAGS: atom excitation, gas-discharge tube, hollow cathode, lithium, Doppler broadening, Li

TRANSLATION: The mechanism of sputtering and excitation of Li in a gas-discharge tube with hollow cathode and filled with He was investigated. The Li was deposited in the form of a thin layer on the bottom of a hollow cathode. The thickness of the glowing film surrounding the precipitate of Li during the discharge is approximately

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L 19368-63
ACCESSION NR: AR3006964

0

0.25 millimeters. It is shown that along with the evaporation of neutral atoms, bombardment of the cathode with helium ions causes also the emission of positive lithium ions with a velocity corresponding to an energy of approximately 10 eV. The Doppler broadening of the spectral lines depends little on the gas pressure and cathode temperature. The intensity distribution in the spectral line is described by the dispersion formula. If thin-layer coatings are used it is possible to carry out a direct isotopic spectral analysis of lithium without taking into account the influence of many extraneous factors which greatly distort the results obtained using thick layers. A. Rodin.

DATE ACQ: 06Sep63 SUB CODE: PH ENCL: 00

Card 2/2

GAVRILOV, F.F.; BEZEL', V.S.; DVINYANINOV, B.L.; KNYAZYUK, L.V., inzh., retsenzent; DUGINA, N.A., tekhn. red.

[Safety measures in X-ray defectoscopy] Bezopasnost' raboty rentgenologa pri defektoskopii. Moskva, Mashgiz, 1963. 77 p. (Biblioteka kontrolera-mashinostroitelia, no.8) (MIRA 16:10)

(X rays--Safety measures)

MUZGIN, V.N.; ZOLOTAVIN, V.L.; GAVRILOV, F.F.

Chemical-spectral method for determining impurities in vanadium.
Zhur. anal. khim. 19 no. 1:111-116 '64. (MIRA 17:5)

1. Ural'skiy politekhicheskiy institut, Sverdlovsk.

L 6744-65 EWT(m)/EWP(q)/EWP(b) AS(mp)-2/SSD/APGC(b)/ESD(gs)/ESD(t) JD/JG

ACCESSION NR: AP4043872 S/0139/64/000/004/0119/0123

AUTHORS: Bezel', V. S.; Gavrilov, F. F. 49 48

TITLE: Effect of temperature and excitation density on the attenuation of alpha scintillations in ZnS-Cu and ZnS-Ag

SOURCE: IVUZ. Fizika, no. 4, 1964, 119-123

TOPIC TAGS: luminescence analysis, luminor, zinc sulfide optic material, luminescence quenching, temperature dependence

ABSTRACT: To clarify the role of the temperature and of the traps in the luminescence kinetics, the authors investigated experimentally the duration and the quenching of luminescence of ZnS-Cu and ZnS-Ag excited with 5 and 1 MeV alpha particles from Pu^{239}. Regularly produced luminors K-430 (ZnS-Ag) and FK-106 (ZnS-Cu) were tested. The scintillation flashes were registered with an FEU-12B photomultiplier. A special installation made it possible to cool the phosphor and

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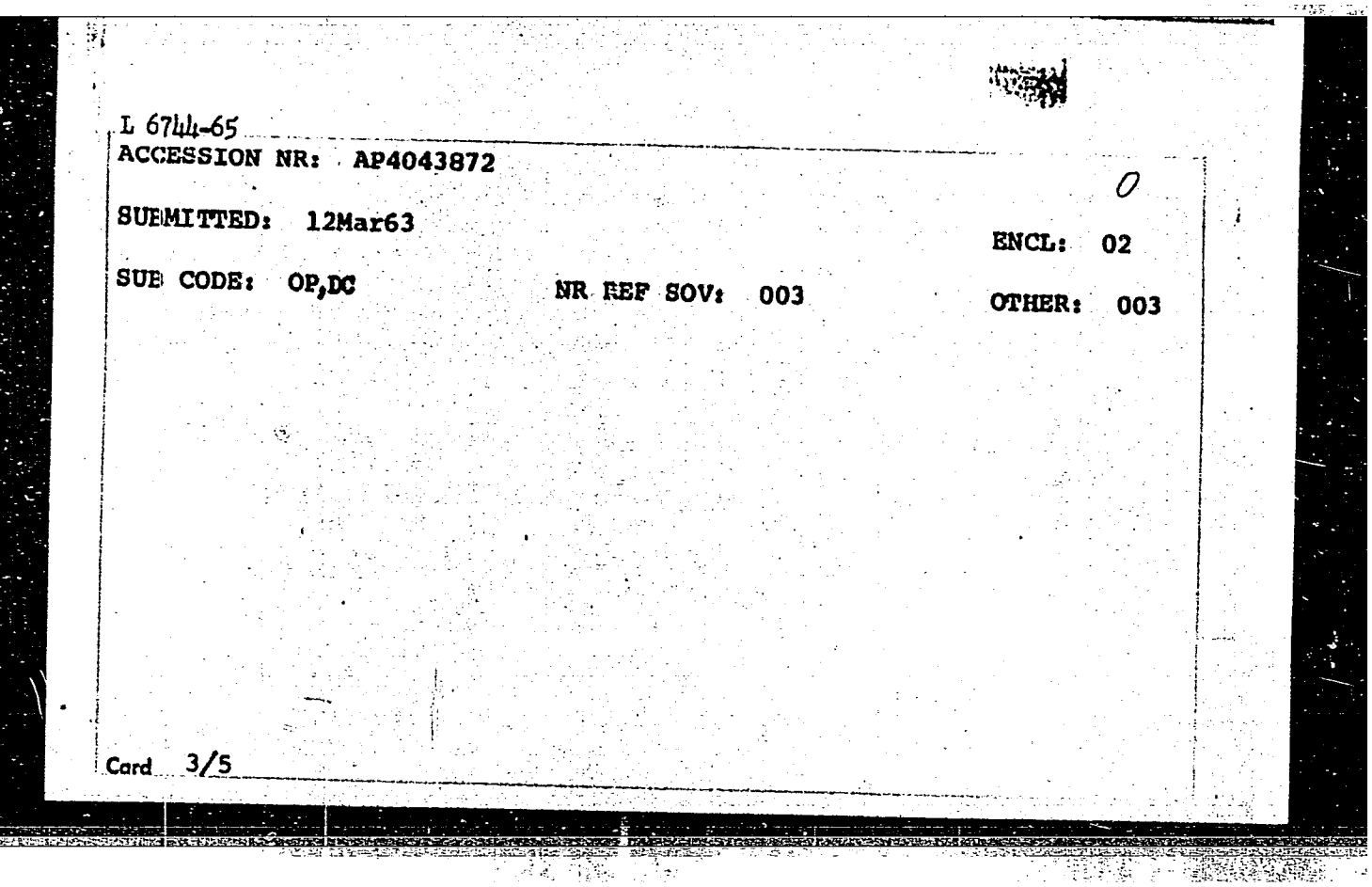
L 6744-65
ACCESSION NR: AP4043872

the photomultiplier with liquid nitrogen to -170C. The photomultiplier pulses were pulse-height analyzed and also displayed on an oscilloscope screen and photographed. The results show that the scintillation quenching duration depends in this case not only on the excitation density but also on the temperature. In the initial stages the quenching curve can be represented in the form of a sum of two exponentials. With decreasing temperature the quenching duration increases. This increase is particularly noticeable if the phosphor is illuminated beforehand with ultraviolet light. It is concluded that the attenuation of the scintillations is greatly influenced by traps and by the de-exciting action of the alpha particles. Orig. art. has: 3 figures, 2 formulas, and 2 tables.

ASSOCIATION: Ural'skiy politekhnicheskiy institut imeni S. M. Kirova (Ural Polytechnic Institut)

Card 2/5



L 6744-65
ACCESSION NR: AP4043872

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SUBMITTED: 12Mar63

ENCL: 02

SUB CODE: OP,DC

NR REF SOV: 003

OTHER: 003

Card 3/5

L 6744-65
ACCESSION NR: AP4043872

ENCLOSURE: 01

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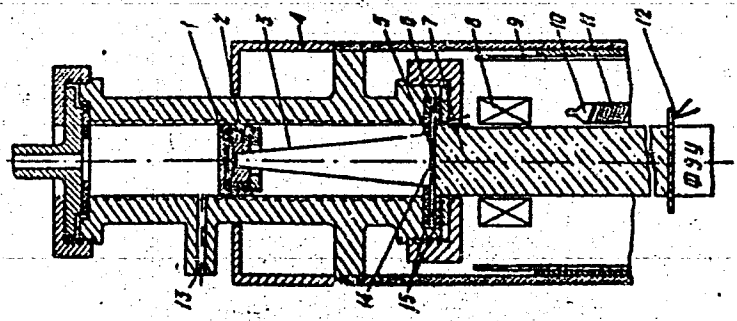

Fig. 1.
Diagram of instrument.

1 - alpha source, 2 - collimator, 3 - reflector, 4 - cooling jacket, 5 - glass, 6 - thermocouple, 7 - light pipe, 8 - heater, 9 - protective tube, 10 - illuminator, 11 - lamp heater, 12 - thermocouple, 13 - hole for manometer, 14 - phosphor, 15 - teflon gasket, ФЭУ - photomultiplier

Card 4/5

L 6744-65
ACCESSION NR: AP4043872

ENCLOSURE: 02

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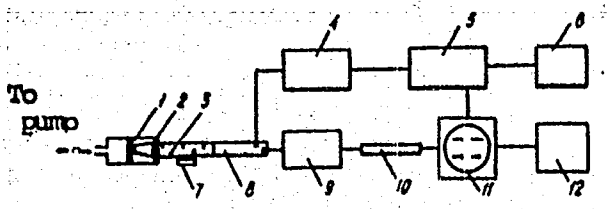

Fig. 2. Block diagram of experimental set-up

1 - alphas source (Pu^{239}), 2 - phosphor, 3 - light pipe, 4 - pulse shaping circuit, 5 - single-channel pulse-height analyzer AADO-1, 6 - scaler PST-100, y - mercury lamp, 8 - photomultiplier FEU-12B, 9 - broadband amplifier, 10 - delay line, 11 - high-speed oscilloscope DESO-1, 12 - standard signal generator G4-1A.

Card 5/5

MUZGIN, V.N.; ZOLOTAVIN, V.L.; GAVRILOV, F.F.; BALAYEV, V.N.

Spectral analysis of vanadium by the vaporization method. Zav. lab. 30 no.6:697-699 '64 (MIRA 17:8)

1. Ural'skiy politekhnicheskiy institut imeni Kirova.

L 2723-66 EWI(l)/EPA(s)-2/EWT(m)/T/EWP(t)/EWP(b)/EWA(c) IJP(c) JD/JG/GG

ACCESSION NR: AP5017194 UR/0139/65/000/003/0175/0175

AUTHORS: Shul'gin, B. V.; Gavrilov, F. F.; Dvinyaninov, B. L.

TITLE: Dielectric constant of single crystals of lithium hydride

SOURCE: IVUZ. Fizika, no. 3, 1965, 175

TOPIC TAGS: lithium compound, dielectric constant, crystal lattice structure, crystal lattice vibration

ABSTRACT: To determine the wavelength of the natural oscillations of the LiH lattice, the authors measured the dielectric constant of transparent crystals with average dimensions 8 x 4 x 1 mm. Under the influence of light, the crystals soon assumed a blue color. The dielectric constant was measured with a capacity meter at 500 kcs and 23C. The value of the dielectric constant was found to be 10.5 ± 0.26. The accuracy of the method was checked by determining the electric constant of Zn, Sn, and LiF which agreed with the published data. The wavelength obtained for the natural vibrations of the LiH lattice is

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L 2723-66
ACCESSION NR: AP5017194

3

$\lambda = 56.5 \times 10^{-4}$ cm. Orig. art. has: 1 table.

ASSOCIATION: Ural'ski politekhnicheskiy institut imeni S. M. Kirova (Ural Polytechnic Institute)

44,55

SUBMITTED: 11Jul64 ENCL: 00 SUB CODE: SS, EM

NR REF SOV: 004 OTHER: 002

Card 2/2

L 65234-65 EWT(1)/EWT(m)/EWP(t)/EWP(b) IJP(c) JD

ACCESSION NR: AP5021492 UR/0368/65/003/002/0176/0178
535.37

AUTHOR: Bezel', V. S.; Gavrilov, F. F.; Bronnikov, V. K.

TITLE: Temperature quenching of luminescence excited by ionizing particles in ZnSAg single crystals

SOURCE: Zhurnal prikladnoy spektroskopii, v. 3, no. 2, 1965, 176-178

TOPIC TAGS: zinc sulfide, crystal phosphor, luminescence quenching, scintillation

ABSTRACT: Curves for temperature quenching and scintillation intensity are compared for ZnSAg single crystals activated by α-particles, protons and electrons to various excitation densities. The amplitudes of the scintillation pulses were studied as a function of the excitation density in the tracks of the ionizing particles. Pu^{239} and ThC-ThC' were used as sources of α-particles. Particles with energies of 2, 3, 4, 5, 6 and 8.77 Mev were produced by varying the vacuum. An EG-2.5 III electrostatic accelerator was used for producing protons with energies of 0.5 and 0.75 Mev. Electron excitation was achieved by irradiation with Co^{60} γ-rays. An FEU-15B photomultiplier and a 100-channel "Raduga" amplitude analyzer were used for

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L 65234-65

ACCESSION NR: AP5021492 6

recording the scintillation bursts. The results are given in table 1 and figs. 1 and 2 of the Enclosure. Here E is the energy of the activating particles; X is the mean free path in ZnS; I is the amplitude of the scintillation bursts; I_0 is the amplitude in the absence of quenching; I_t is the amplitude at room temperature; dI_0/dX is the specific amplitude; and dE/dX is the linear excitation density. It was found that in the region of strong quenching ($t = 60°C$), dI/dX is related to the linear excitation density by a 3/2 law in the interval where $\frac{dI_0/dX}{dE/dX}$ is independent of dE/dX (see fig. 1 of the Enclosure). A theoretical explanation is given for deviation from the 3/2 law at high excitation densities. Orig. art. has: 2 figures, 1 table.

ASSOCIATION: none

SUBMITTED: 05Jan65 ENCL: 03 SUB CODE: SS, OP

NO REF SOV: 004 OTHER: 002

Card 2/5

L 65234-65

ACCESSION NR: AP5021492

ENCLOSURE: 01

6

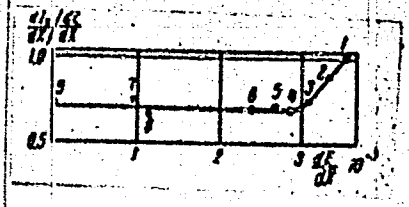

Fig. 1. $\frac{dI_0/dX}{dE/dX}$ as a function of excitation density dE/dX (Mev/cm) for excitation by α-particles (1-6), protons (7, 8) and electrons (9):

Point No	E, Mev	$\frac{dE}{dX} \times 10^{-3}$, Mev/cm
	α-particles	
1	2	3.51
2	3	3.31
3	4	3.08
4	5	2.84
5	6	2.68
6	8.77	2.37
	protons	
7	0.75	0.96
8	0.50	1.13
	electrons	
9	1.25	$\sim 8 \cdot 10^{-3}$

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L 65234-65

ACCESSION NR: AP5021492 ENCLOSURE: 03

Table 1

Parameter	Type of excitation: α-particles						protons		electrons
E, Mev	2.00	3.00	4.00	5.00	6.00	8.77	0.75	0.50	1.25
$X \cdot 10^4$, cm	5.70	9.05	13.00	17.60	22.40	37.00	7.81	4.43	1500
I_t, relative units	0.58	0.78	0.86	1.00	1.27	1.75	0.14	0.08	0.13
dE/dX, Mev/cm	3.51	3.31	3.08	2.84	2.68	2.37	0.96	1.13	$8.35 \cdot 10^{-3}$
$\frac{dI_G}{dX} / \frac{dE}{dX}$, relative units	1.00	0.90	0.74	0.70	0.74	0.70	0.75	0.67	0.72

Card 5/5

L 43913-65 EPF(c)/EPF(n)-2/EPR/EWT(l)/EWT(m)/EWP(b)/EWP(t) Pi-4/Pr-4/Ps-4/Pu-4

ACCESSION NR: AP5009516 IJP(c) JD/JG S/0048/65/029/003/0415/0416

AUTHOR: Dvinyaninov, B.L.; Gavrilov, F.F.; Shul'gin, B.V. 43 B

TITLE: Excitation and luminescence spectra of magnesium-activated lithium hydride /Report, 12th Conference on Luminescence held in L'vov, 30 Jan-5 Feb 1964/

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v. 29, no. 3, 1965, 415-416

TOPIC TAGS: luminescence, lithium compound, hydrogen compound, magnesium

ABSTRACT: This short paper reports some of the results obtained concerning the luminescence of LiH since its earlier discovery by one of the authors (F.F. Gavrilov, Optika i spektroskopiya, 7, 371 (1959)). LiH:Mg exhibits a bright yellow luminescence, the excitation spectrum for which has two peaks located at about 300 and 400 mμ. This luminescence is excited both by activator absorption and lattice absorption, but not by F center absorption. The luminescence spectrum of LiH:Mg was calculated in the semiclassical approximation by the method of F.E. Williams (J.Chem. Phys., 19, 457 (1951)) on the assumption that the magnesium is monovalent, and on the assumption that it is divalent. As the calculated luminescence spectrum of LiH:Mg^+ was at least in the visible region whereas that for

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L 43913-65

ACCESSION NR: AP5009516

LiH:Mg^{2+} was in the far ultraviolet, it is concluded that magnesium is monovalent in LiH:Mg and probably also in LiF:Mg. Orig. art. has: 2 figure and 1 table.

ASSOCIATION: None

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

NR REF SOV: 004 OTHER: 001

Card 2/2 pb

L 15565-66 EWT(l)/EWT(m)/EWP(t)/EWP(b) IJP(c) JD/JG

ACC NR: AP6004407 SOURCE CODE: UR/0051/66/020/001/0074/0077

AUTHOR: Dvinyaninov, B. L.; Gavrilov, F. F.

ORG: none

TITLE: Color centers in lithium hydride

SOURCE: Optika i spektroskopiya, v. 20, no. 1, 1966, 74-77

TOPIC TAGS: absorption spectrum, single crystal, lithium compound, ionic hydride, color center, alkali halide

ABSTRACT: The optical absorption spectra of lithium hydride are studied as a function of time of exposure to light. Single crystals were grown by slowly cooling a melt of hydrated lithium. Unfiltered light from a mercury tube was used for preliminary exposure of the crystals. All crystals showed a strong absorption band in the 2400 Å region. This band is probably due to F-centers. This is the only absorption band observed in pure undyed crystals of lithium hydride. As exposure time is increased, a new maximum in the absorption spectrum is observed in the 3600 Å region. The F-band is also somewhat broadened. The crystals take on a smoked color which is

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L 15565-66

ACC NR: AP6004407

gradually intensified to complete opacity. The absorption spectrum for these crystals stretches throughout the entire visible region. The most intense coloring is observed in the surface layer when the crystals are exposed from one side. This is probably due to absorption of the light in the crystal. Bands were also observed with absorption maxima at 5400, 7000 and 95000 Å. A qualitative analysis of these spectra shows that the bands are due to the formation of color centers as in alkali halide crystals. These bands are most clearly observed in crystals contaminated by metal impurities, but they are also seen in pure crystals. Theoretical calculations are compared with experimental data for the wavelengths at various color centers. The results show that color centers in lithium hydride have spectral characteristics similar to those in alkali halide crystals. In conclusion the authors are grateful to L. A. Mal'tsev who assisted in making some of the measurements. Orig. art. has: 4 figures, 1 table.

SUB CODE: 20/ SUBM DATE: 28Jul64/ ORIG REF: 000/ OTH REF: 008

Card 2/2

L-21997-66 EWT(m)/T/EWP(t) DIAAP/IJP(c) JD/JG

ACC NR: AP6006970 SOURCE CODE: UR/0368/66/004/002/0185/0187

43
13

AUTHOR: Bezel', V.S.; Gavrilov, F. F.

ORG: none

TITLE: The relationship between the amplitude and the duration of attenuation of the scintillation spikes in ZnS-Ag (Paper presented at the 12th All-Union Conference on Luminescence held in L'vov in January 1964)

SOURCE: Zhurnal prikladnoy spektroskopii, v. 4, no. 2, 1966, 185-187

TOPIC TAGS: single crystal, scintillation, thermoluminescence, photoluminescence

19

ABSTRACT: The authors employed alpha-particles Pu^{239} and ThC-ThC^1 for the excitation of the single crystals ZnS-Ag. Changes in the vacuum produced alpha-particles of 2, 3, 4, 5, 6, and 8.77 Mev. An investigation was made of attenuation only when the alpha-particle excitation was conducted with an optimal amplitude. A study of the thermoluminescence curves of the samples tested showed the presence of two kinds of high-intensity traps, and the authors made use of the results of M. V. Fok and S. A. Fridman (Opt. i spektr., 13, 869, 1962) in the study of the kinetics and scintillation output. Simultaneous with the

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L 21997-66

ACC NR: AP6006970 O

excitation by means of 5-Mev alpha-particles, a study was made of the temperature dependence of the amplitude of the scintillations and the duration of attenuation. A diagram presented shows that the curves are very close to each other, possibly indicating that the depth of electron and hole traps are close in magnitude. The present investigations show that, with certain limitations, the mechanisms observed during the photoluminescence may be analogous to the mechanisms during the excitation of high-energy particles, and that the difference between them is, evidently, in the density of excitation. Orig. art. has: 2 figures and 1 table.

SUB CODE: 20 / SUBM DATE: 05Jan65 / ORIG REF: 007

Card 2/2 BK

L 24361-66 EWT(l)/EWT(m) IJP(c) JD/JG
ACC NR: AP6008118 SOURCE CODE: UR/0139/66/000/001/0189/0189

AUTHORS: Shul'gin, B. V.; Gavrilov, F. F.; Sazykin, V. V. 64 B

ORG: Ural Polytechnic Institute im. S. M. Kirov (Ural'skiy politekhnicheskiy institut)

TITLE: Storing of light sum in LiH phosphor

SOURCE: IVUZ. Fizika, no. 1, 1966, 189

TOPIC TAGS: lithium compound, hydride photoluminescence, luminophor, thermoluminescence, uv irradiation, gamma irradiation, neutron irradiation, alpha bombardment, electron trapping

ABSTRACT: This is a continuation of earlier articles (Trudy Ural'skogo Politekhnicheskogo Instituta, No. 143, 41, 1965 and earlier, Izv. AN SSSR ser. fiz. v. 29, No. 3, 415, 1965) dealing with the discovery and investigation of short-duration yellow, orange, and red photoluminescence of LiH. The present article presents results of an investigation of the thermoluminescence curves of the blue luminescence of LiH when exposed to ultraviolet from a mercury lamp, to

Card 1/2

L 24361-66

ACC NR: AP6008118

15-MeV radiation from a betatron (beta and gamma particles), to 5.12-MeV α particles, and to (n + γ) radiation from a Ra-Be source. Paraffin 6 cm thick was used as the neutron moderator. The crystals were heated in darkness to 300C and the irradiation was at room temperature in a vacuum. The radiation was recorded with a photomultiplier, amplifier, and automatic recorder. The time of irradiation of the crystals before plotting the de-excitation curves was 10 -- 15 days for neutrons and α particles, 10 -- 15 hours for the betatron radiation, and 20 -- 30 minutes for the uv irradiation. The temperature was raised at a rate of 35 -- 40 deg/min. The de-excitation curves show three peaks at 80 -- 90C, 140 -- 150C, and 230 -- 300C. The highest peak has a superimposed structure. When exposed to ultraviolet all three types of electron traps corresponding to the peaks are filled approximately uniformly. When exposed to neutrons, α particles, and betatron radiation, it is essentially the deep traps which are filled (peak at 230 -- 300C). Having blue luminescence and being capable of storing the light sum, LiH is of great interest as a detector of ionizing radiation. Orig. art. has: 1 figure.

SUB CODE: 20/ SUBM DATE: 060ct64/ ORIG REF: 003/

Card 2/2

L 28337-66 EWT(l)/EWT(m)/T/EWP(t)/ETI IJP(c) JD

ACC NR: AP6013076 SOURCE CODE: UR/0048/66/030/004/0668/0670

AUTHOR: Bezel', V.S.; Gavrilov, F.F.; Panov, V.P.; Kraynyukov, N.I.

54
B

ORG: none

TITLE: Investigation of scintillation processes in ZnS:Ag single crystals /Report, Fourteenth Conference on Luminescence held in Riga 16-23 September 1965/

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v. 30, no. 4, 1966, 668-670

TOPIC TAGS: scintillation, crystal phosphor, zinc sulfide, radioluminescence, stimulated emission, crystal decay, emission spectrum

ABSTRACT: Although in general the regularities evinced in radioluminescence of ZnS:Ag single crystals can be explained in the framework of the same energy band diagram as that invoked for interpreting the photo- and cathodoluminescences of this phosphor, the much higher excitation density in the case of radioluminescence gives rise to some distinctive effects. The present work, accordingly, was devoted to experimental investigation of the influence of the excitation density along the particle track on the thermostimulated emission (glow curves), decay time, emission spectrum and electroquenching. The specimens were relatively large ZnS:Ag (about 3×10^{-5} g/g Ag) single crystals grown from a melt. The excitation was produced by Pu^{239} and ThC-ThC' alpha particles, protons, deuterons, gamma rays and Hg ultraviolet. The glow curves (reproduced in a figure) were recorded after excitation with 2 MeV and 5 MeV alphas

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ACC NR: AP6013076

0

and with UV. All three glow curves have peaks at -150°, but only the glow curve obtained after UV excitation exhibits a broad peak located just below 0°C. The trap depth corresponding to the -150°C peak is estimated as 0.25-0.28 eV. The persistence of the scintillation falls off with increasing excitation density along the track in agreement with the theoretical curve adduced by the authors. The intensity in the short wavelength part of the radioluminescence spectrum increases with increasing excitation density for all forms of excitation. Electroquenching (quenching by a dc field) was found to be analogous to temperature quenching. Orig. art. has: 2 figures.

SUB CODE: 20/ SUBM DATE: 00 ORIG REF: 004/ OTH REF: 001

L 09239-67 EWT(1)/EWT(m)/EWP(t)/ETI IJP(c) JD/JG

ACC NR: AP7002787 SOURCE CODE: UR/0139/66/000/004/0138/0141

37

AUTHOR: Bezel', V. S.; Gavrilov, F. F.

ORG: Ural'sk Polytechnic Institute im. S. M. Kirov (Ural'skiy politekhnicheskiy institut)

TITLE: Effect of excitation density on the radioluminescence of ZnS-Ag monocrystals

SOURCE: IVUZ. Fizika, no. 4, 1966, 138-141

TOPIC TAGS: radioluminescence, crystallography

ABSTRACT: The effect of excitation density of the temperature quenching of radioluminescence of ZnS-Ag monocrystals is investigated. The radius of the excitation channel as dependent on the energy of the alpha particles is evaluated. Corrections are introduced into the dependence of the scintillation amplitude on the excitation density, which deviates from the law by the factor 3/2. Orig. art. has: 3 figures and 5 formulas. [JPRS: 39,040]

SUB CODE: 20 / SUBM DATE: 07Oct64 / ORIG REF: 003 / OTH REF: 001

Card 1/1

0925 1670

ACC NR: AP6033837 SOURCE CODE: UR/0139/66/000/005/0056/0062

AUTHOR: Bezel', V. S.; Gavrilov, F. F.

ORG: Ural Politechnic Institute im. S. M. Kirov (Ural'skiy politekhnickeskiy institut)

TITLE: Effect of the excitation density on the radioluminescence of ZnS—Ag single crystals

SOURCE: IVUZ. Fizika, no. 5, 1966, 56-62

TOPIC TAGS: electron trapping, alpha particle, radioluminescence, luminescence, cathode luminescence, particle excitation, zinc sulfide crystal

ABSTRACT: The role of electron trappings in processes of radioluminescence is analyzed on the basis of an investigation of the dependence of scintillation damping duration on temperature on thermoluminescence curves, and the relationship between the amplitude and damping duration in ZnS—Ag. The causes of the nonequilibrium filling of electron trappings during excitation of α-particles are discussed. Wide use is made by the authors of the relationships obtained by other researchers in photoluminescence and cathodoluminescence studies. Orig. art.

ACC NR: AP6033837

has: 5 figures, 10 formulas, and 1 table. [Based on authors' abstract]

SUB CODE: 20/ SUBM DATE: 07Oct64/ ORIG REF: 012/ OTH REF: 001/

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000514430001-3"

ACC NR: AT7001712 SOURCE CODE: UR/2594/65/000/143/0036/0040

AUTHOR: Bezel', V. S.; Gavrilov, F. F.; Murin, V. I.

ORG: none

TITLE: Thermoluminescence of ZnS-Ag and the temperature dependence of its quenching rate upon excitation with alpha particles

SOURCE: Sverdlovsk. Ural'skiy politekhnicheskiy institut. Trudy, no. 143, 1965. Atomnaya i molekulyarnaya fizika (Atomic and molecular physics), 36-40

TOPIC TAGS: thermoluminescence, zinc sulfide optic material, alpha bombardment, luminescence quenching, scintillation

ABSTRACT: This is a continuation of earlier work (Tezisy dokladov XII soveshchaniya po lyuminestsentsii [Abstracts of Twelfth Luminescence Conference], M., 1964) where it was shown that the quenching rates of photoluminescence and cathode luminescence in ZnS-Ag increase with increasing density of excitation by α particles. To establish a connection between the quenching of the scintillations and the electron traps in ZnS-Ag, in view of the fact that the earlier investigation has shown that at least two kines of such traps exist in this material, the authors investigated the thermoluminescence curves and the rate of scintillation quenching by exposing ZnS-Ag crystals grown from the melt to α particles. The temperature range was from that of liquid nitrogen to 100C. The rate of change of the temperature was 0.4 deg/sec. The samples were excited with ultraviolet from a mercury lamp (3660 Å) and α particles

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ACC NR: AT7001712

from Pu^{239} (5.15 and 2 MeV). The thermoluminescence curves showed two main peaks, at -150 - 160C and at -10 - 0C. The former is connected with the filling of the shallow levels and the latter with the filling of deep levels. In the case of α-particle irradiation, a similar phenomenon was observed, except that there was practically no filling of the deep levels. An analysis of the temperature dependence of the attenuation of the scintillations shows the half-life of the scintillations to be a regular function of the reciprocal of the temperature, which can be represented by a straight line when suitable coordinates are chosen. This temperature dependence also points to the predominant effect of the shallow levels. The depth of the level is found to be 0.15 eV below the conduction band. The results also point to a much stronger effect of α-particle irradiation on the attenuation than ultraviolet. Orig. art. has: 3 figures and 2 formulas.

SUB CODE: 20/ SUBM DATE: 00/ ORIG REF: 005/ OTH REF: 003

Card 2/2

ACC NR: AT7001713 SOURCE CODE: UR/2694/65/000/143/0041/0044

AUTHOR: Bezel', V. S.; Gavrilov, F. F.

ORG: none

TITLE: Some scintillation properties of ZnS-Ag single crystals

SOURCE: Sverdlovsk. Ural'skiy politekhnicheskiy institut. Trudy, no. 143, 1965. Atomnaya i molekulyarnaya fizika (Atomic and molecular physics), 41-44

TOPIC TAGS: zinc sulfide optic material, scintillation, activated crystal, photoluminescence, luminescence quenching, ionization spectrum

ABSTRACT: The authors present the results of an investigation of ZnS-Ag, grown from the melt, with different activator contents and with different preparation technology. It is pointed out that the scintillating properties of activated ZnS single crystals have not been investigated before, primarily because of the difficulty of growing single crystals. The tests consisted of plotting the photoluminescence of the crystals, determining the amplitude of the scintillation pulses as functions of the energy of the ionizing particles (α particles, protons, deuterons, electrons), and determining the half-lives of the scintillations. The α-particle energies were 8.77, 5.0, and 2.0 MeV. The energies of the protons, deuterons, and electrons were 0.75, 0.75, and 1.25 MeV respectively. While the results are not fully conclusive, they point to possible usefulness of these crystals for the registration and spectrometry of ionizing radiation. The best results can be obtained with α-particle energies of 5 MeV

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ACC NR: AT7001713

and better, which gave a resolution reaching 5% in the case of the better crystals. Orig. art. has: 3 figures and 1 table.

SUB CODE: 20/ SUBM DATE: 00/ ORIG REF: 001/ OTH REF: 001

Card 2/2

ACC NR: AT7001714 SOURCE CODE: UR/2694/65/000/143/0059/0061

AUTHOR: Shul'gin, B. V.; Gavrilov, F. F.; Dvinyaninov, B. L.

ORG: none

TITLE: Concerning F-centers in LiF crystals

SOURCE: Sverdlovsk. Ural'skiy politekhnicheskiy institut. Trudy, no. 143, 1965. Atomnaya i molekulyarnaya fizika (Atomic and molecular physics), 59-61

TOPIC TAGS: lithium fluoride, color center, absorption spectrum, hyperfine structure, epr spectrum, ionization spectrum

ABSTRACT: The purpose of the investigation was to estimate theoretically what changes in the widths of the hyperfine splitting lines can be expected in the case when the F-centers in LiF crystals are in a state where they form weak associations, rather than being in a state of isolated defects. The analysis is based on comparison of experimental results on the EPR absorption spectrum of the F-centers in LiF crystals, produced by ionizing radiation, and similar results obtained for KCl. From a plot of the F-center exchange-interaction frequency against the distance between F-centers it is deduced that narrowing down of the hyperfine interaction lines in the EPR spectra of LiF crystals should be observed at distances on the order of four lattice constants between F-centers. This corresponds to an F-center concentration $\sim 10^{21}$ cm^{-3}, which agrees with experimental data. The estimated change in the line width is by a factor approximately 1.28. This means that if the width of the hyperfine inter-

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ACC NR: AT7001714

action in LiF state is 14 gauss, as published in the literature, then in the initial state it should be 18 gauss. Appropriate experiments are needed to confirm this value. Orig. art. has: 1 figure and 6 formulas.

SUB CODE: 20/ SUBM DATE: 00/ ORIG REF: 001/ OTH REF: 007

Card 2/2

ACC NR: AP7004981 SOURCE CODE: UR/0048/66/030/009/1487/1489

AUTHOR: Dvinyaninov,B.L.; Gavrilov,F.F.

ORG: none

TITLE: Dynamics of the formation of some color centers in lithium hydride /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, 1487-1489

TOPIC TAGS: lithium compound, hydride, absorption spectrum, single crystal, color center

ABSTRACT: The authors have recorded absorption spectra of LiH crystals grown slowly from the melt and have investigated the effects on the absorption of ultraviolet irradiation and changes in the conditions under which the crystals were grown. All the crystals were transparent in the visible and had a very strong absorption band in the 220-260 mμ region. Rapid cooling during crystal growth or the presence of an excess of lithium in the melt resulted in a broadening of this band. Irradiation with low intensity 253 mμ radiation resulted first in a partial bleaching of this band and splitting of the band into two bands. After further irradiation the absorption again increased and the two component bands merged. These results are regarded as favoring the hypothesis that this band is due to absorption by F centers

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ACC NR: AP7004981

rather than to exciton absorption. Ultraviolet irradiation gave rise also to other absorption bands in the LiH crystals. The crystals that contained an excess of lithium or that were cooled rapidly during growth behaved similarly to LiH:Mg crystals. The growth under ultra violet irradiation of the 655 mμ absorption band due to colloidal lithium was different, depending on whether a given ultraviolet dose was received over a long time interval from a weak source, or was delivered rapidly from a strong source; the peak of the absorption band occurred at a shorter wavelength when the ultraviolet dose was received rapidly than when it was received slowly. From this it is concluded that the formation of colloidal lithium in LiH crystals involves a stage in which color centers are produced. Orig. art. has: 2 figures.

SUB CODE: 20 SUBM DATE: none ORIG. REF: 002 OTH REF: 005

Card 2/2

ACC NR: AP7007711 SOURCE CODE: UR/0139/67/000/001/0069/0073

AUTHOR: Shul'gin, B. V.; Gavrilov, F. F.; Dvinyaninov, B. L.; Koryakov, V. I.; Chirkov, A. K.

ORG: Ural Polytechnic Institute imeni S. M. Kirov (Ural'skiy politekhnicheskiy institut)

TITLE: Paramagnetic resonance of irradiated lithium hydride luminescent crystals

SOURCE: IVUZ. Fizika, no. 1, 1967, 69-73

TOPIC TAGS: luminescent crystal, activated crystal, absorption line, electron paramagnetic resonance, lithium compound, hydride, temperature dependence, color center

ABSTRACT: The dependence of the intensity and width of the absorption line of the EPR on temperature was investigated in irradiated lithium hydride luminescent crystals. The irradiation was done at room temperature with the unfiltered light of an SVD-120 mercury lamp and betatron electrons with energies of 8 to 10 Mev. The temperature dependence of the intensity and width of the EPR absorption line of LiH crystals with blue luminescence undergoes a sharp change in the temperature range from 90 to 120°C. The first maximum on the thermoluminescence curve is also observed in this range. This coincidence

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ACC NR: AP7007711

occurs because the centers of the electron capture in LiH responsible for the first thermoluminescence peak are bound with the colloidal lithium. The release of electrons from the capture level corresponding to the first thermoluminescence peak causes the elimination of these absorption centers. As a result, the intensity of the paramagnetic absorption line decreases and the width increases due to the absorption by the color cneters. The authors thank M. Lemberberg who participated in the investigation of the optical absorption spectra of LiH. Orig. art. has: 3 figures. [JA] [WA-95]

SUB CODE: 20/ SUBM DATE: 03Aug65/ OTH REF: 003

Card 2/2

GAVRILOV, F.

11G39

USSR/Agricultural Machinery 4302.0500 Aug 1947

"To Universalize Farm Machinery," F. Gavrilov, 3 pp

"MTS" No 8

Suggestions made to construct agricultural machinery in such a manner as to make them adaptable for more than one operation. Examples of types of farm machinery that may be utilized for more than one purpose and examples of minor technical changes needed to be made in order to implement this idea are also given.

LC 11G39

1. GAVRILOV, F.
2. USSR (600)
4. Drill (Agricultural Implement)
7. Improving the operation of a grain drill, MTS 13 no. 4, 1953.

9. Monthly List of Russian Accessions, Library of Congress, APRIL 1953, Uncl.

[redacted], [redacted], I.

Attrition on the reverse of the plowshare. Tr. from the Russian. p. 267. (JARMUVEK ES GEPEK, Budapest, Hungary), Vol. 1, No. 9, Sept. 1954.

SO: Monthly List of East European Accessions, (EEAI., LC, Vol. 4, No. 5, May 1955.

GAVRILOV, F.I., kandidat sel'skokhozyaystvennykh nauk; KORUSHKIN, Ye.N., kandidat tekhnicheskikh nauk.

Necessity of differentiated heat treatment of plowshares. Sel'khozmashina no.2:26-28 F'55. (MLRA 8:3)

1. Novosibirskiy sel'skokhozyaystvennyy institut.

GAVRILOV, Fedor Ivanovich

[Efficient use of grain combines] Ratsional'noe ispol'zovanie zernovykh kombainov. Moskva, Mashgiz, 1958. 40 p. (MIRA 12:3)
(Combines (Agricultural machinery))

GAVRILOV, F.I., kand.sel'skokhozyaystvennykh nauk

Technical and economic evaluation of the service reliability of machinery. Trakt.i sel'khozmash. 30 no.2:28-30 F '60. (MIRA 13:5)

1. Voronezhskiy sel'skokhozyaystvennyy institut.
(Agricultural machinery)

GAVRILOV, F., kand.sel'skokhoz.nauk, dotsent

Future equipment and the requirements of agriculture. NTO 4 no.5:10-12 My '62. (MIRA 15:5)

1. Voronezhskiy sel'skokhozyaystvennyy institut.
(Agricultural machinery)

GAVRILOV, F.M.; BELOKUROV, A.I.

Treatment of cholecystitis. Khirurgiia no.5:47-49 My '56.
(MLRA 9:9)

1. Iz bol'nitsy Moskovsko-Ryazanskoy zheleznoydorogi.
(CHOLECYSTITIS, therapy,
(Rus))

AUTHOR: Gavrilov, F. N. SOV/6-59-5-10/26

TITLE: On the Erection of Tripod Signals (O postroyke trekhgrannykh signalov)

PERIODICAL: Geodeziya i kartografiya, 1959, Nr 5, pp 26-27 (USSR)

ABSTRACT: During the 1958 summer season, tripod signals were erected, on the patterns proposed by Senior Engineer S. V. Potanin, in the Novosibirskoye aerogeodezicheskoye predpriyatiye (Novosibirsk Aerogeodetic Project). The 15-25-m-high signals were erected by the construction parties of Technician V. P. Lavrikov and Junior Technician D. B. Semenov. The tripod signals were assembled on the ground (including the floor covering, the roof, the sights, the ladder, and the transition platform) and then raised en bloc. This procedure eliminates the danger of accidents in work overhead and saves timber and nails. The erection of the signals is described in brief. There are 2 figures.

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3(4) SOV/6-59-7-9/25

AUTHOR: Gavrilov, F. N.

TITLE: On the Use of Dredge E-153 (Ob ispol'zovanii ekskavatora E-153)

PERIODICAL: Geodeziya i kartografiya, 1959, Nr 7, pp 35 - 37 (USSR)

ABSTRACT: In summer 1958, the Brigade of V. P. Lavrikov, Constructional Engineer, Department Nr 102, Novosibirskoye aerogeodezicheskoye predpriyatiye (Novosibirsk Aerogeodetic Service), used dredge E-153 (on tractor MTZ-2) with a trailer for the building of geodetic signs. The dredge carried out the excavation work, turned and lifted the frames of the rectangular signals, lifted triangular signals 20 m high, and transported the whole Brigade with equipment from place to place. In 5.5 months, the Brigade fulfilled 8 month standards. A survey of monthly expenses with and without the use of the dredge, and the savings made possible by its use, are indicated. A survey of monthly wages with the use of the dredge, and the resulting increase in capacity, are pointed out. There are 2 tables.

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GAVRILOV, F.N.

The GAZ-47 all-terrain vehicle in the construction of geodetic signals beyond the Arctic Circle. Geod. i kart. no. 3:47-50 Mr '61. (MIRA 14:4)

(Caterpillar tractors) (Arctic regions---Surveying)

PLOTKIN, R.M.; GAVRILOV, F.N.; GAS'KOV, V.A.

Construction of storehouses in areas beyond the Arctic Circle.
Geod. i kart. no.3:58 Mr '63. (MIRA 16:7)

(Russia, Northern—Farm buildings)

GAVRILOV, F.N.

Combined surveying and construction teams in conditions beyond the Arctic Circle. Geod. i kart. no.5:66-67 My '63.
(MIRA 16:7)

(Russia, Northern--Triangulation)

GAVRILOV, F. P.
Vostrikov, N. A.

Zapasnyye Chasti Sel'Skokhozyaystvennykh Mashin I Orudiy. Al'Bom Chertezhey / Spare parts for Agricultural Machines and Tools. Album of Drawings, By / N. A. Vostrikov, F. P. Gavrilov / I Dr. /
Moska, Mashgiz, 1953-

V. (V. - P.) Diagrs.

Contents.--V. I: Pochvoobrabatyvayushchiye I Posevnyye Mashiny, Opryskivateli, Opylivateli I statsionarnyye Dvigateli.

GAVRILOV, F.P.

SMIRNOV, I.I., kandidat tekhnicheskikh nauk, redaktor; GAVRILOV, F.P., inzhener, redaktor; POPOVA, S.M., tekhnicheskiy redaktor.

[Design and construction of agricultural machinery; collection of articles based on materials of the scientific and technical conference held in Rostov-on-Don, Feb. 2-6, 1953.] Konstruirovanie i proizvodstvo sel'skokhoziaistvennykh mashin; sbornik statei po materialam nauchno-tekhnicheskoi konferentsii sostoiavsheisia 2-6 fevralia 1953. g. v Rostove-na-Donu. Pod red. I.I.Smirnova. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. lit-ry, 1954. 446 p.
(Agricultural machinery industry) (MLRA 8:1)

SEMENOV, V.M., inzhener-mekhanik; GAVRILOV, F.P., redaktor; SKDMIGRADSKAYA, V.D., tekhnicheskiy redaktor; HALLOD, A.I., tekhnicheskiy redaktor

[Practical laboratory work on tractors and automobiles] Laboratorno-prakticheskie zaniatiia po traktoram i avtomobiliam. Izd. 2-e, perer. i dop. Moskva, Gos. izd-vo selkhoz. lit-ry, 1955. 319 p.
(Automobiles) (Tractors) (MLRA 8:8)

SPERANSOV, Nikolay Nikolayevich; GAVRILOV, F.P., redaktor; SOKOLOVA, N.N., tekhnicheskiy redaktor.

[Fuels and lubricants] Goriuchie i smazochnye materialy. Moskva, Gos. izd-vo sel'khoz. lit-ry, 1954. 455 p. (MLRA 7:7)
(Petroleum) (Lubrication and lubricants) (Oil reclamation)

YATCHENKO, S.V.; GAVRILOV, F.P., redaktor; BALLOD, A.I., tekhnicheskiy redaktor

[Lathe work] Tokarnoe delo. 6 izd., perer. i dop. Moskva, Gos. izd-vo selkhoz. lit-ry, 1954. 535 p. (MLRA 7:9)
(Turning)

PRONIN, Ardalion Fedorovich; PENKIN, Mikhail Alekseyevich; GAVRILOV, F.P., redaktor; PAVLOVA, M.M., tekhnicheskiy redaktor.

[Mechanization and electrification of agriculture] Mekhanizatsiia i elektrifikatsiia sel'skogo khoziaistva. Moskva, Gos. izd-vo selkhoz. lit-ry, 1955. 550 p. (Uchebniki i uchebnye posobiia dlia sel'skokhoziaistvennykh tekhnikumov). (MLRA 9:4)

(Electricity in agriculture) (Agricultural machinery)

SURZHANENKO, Anatoliy Yemel'yanovich; GAVRILOV, F.P., redaktor; ANTONYUK, P.D., tekhnicheskiy redaktor

[Mechanization of plastering work (by the use of lime mixtures and mixtures with additives having quick-setting properties)] Mekhanizatsiia shtukaturnykh rabot (s primeneniem izvestkovykh rastvorov i rastvorov s bystroskhvatyvaiushchimisia dobavkami). Moskva, Vses. uchebno-pedagog.izd-vo Trudrezervizdat, 1956. 82 p. (MLRA 10:9)
(Plastering)

GAVRILOV, F.P.

GEORGIYEVSKIY, Ivan Semenovich, kandidat tekhnicheskikh nauk, dotsent; GAVRILOV, F.P., redaktor; PAVLOVA, M.M., tekhnicheskiy redaktor.

[Methods of teaching a course on agricultural machinery] Metodika prepodavaniia kursa sel'skokhoziaistvennykh mashin. Moskva, Gos. izd-vo sel'khoz.lit-ry, 1956. 271 p. (MLRA 10:6)
(Farm mechanization--Study and teaching)

ITINSKAYA, Nadeshda Ivanovna, dotsent; VIL'YAMS, Vl.R., zasluzhennyy deyatel' nauki i tekhniki, dekter tekhnicheskikh nauk, professor, redaktor; GAVRILOV, F.P., redaktor; VESKOVA, Ye. I., tekhnicheskiy redaktor.

[Fuel and lubricants] Teplivo i smazochnye materialy. Pod red.Vl.Vil'-iamsa. Moskva, Ges.izd-vo sel'skokhoziaistvennoi li-ry, 1956. 295 p. (MLRA 9:5)

1. Moskovskiy institut mekhanizatsii i elektrifikatsii sel'skogo khozyaystva imeni V.M.Molotova.
(Fuel) (Lubrication and lubricants)

ABUGOV, Boris Grigor'yevich; KOZAREZ, Vladimir Yakovlevich; PENKNOVICH, L.D., nauchnyy red.; GAVRILOV, F.P., red.; ROMANOV, B.V., red.; RAKOV, S.I., tekhn.red.

[Collection of problems in mechanical drawing] Zadachnik po mashinostroitel'nomu chercheniiu. Izd. 2-oe, ispr. i perer. Moskva, Vses. uchebno-pedagog. izd-vo Trudrezervizdat, 1957. 366 fold. l. (in portfolio) ___ [Practical manual for teachers to accompany the "Collection of problems in mechanical drawing."] Metodicheskoe rukovodstvo dlia prepodavatelei k zadachniku po mashinostroitel'nomu cherchenilu. Izd. 2-oe, ispr. i perer. 1957. 39 p. (MIRA 11:4)
(Mechanical drawing--Study and teaching)

MOSOLOV, Konstantin Vasil'yevich; GAVRILOV, F.P., red.; MATUSEVICH, N.L., tekhn.red.

[Sixty problems for young designers and inventors] 60 zadach dlia molodogo konstruktora i izobretatelia. Moskva, Vses.uchebno-pedagog.izd-vo Trudrezervizdat, 1957. 48 p. (MIRA 12:6)

1. Direktor tekhnicheskogo uchilishcha No.11 g.Leningrada (for Mosolov).

(Machinery--Drawing)

USTINOV, Nikolay Petrovich, kand.tekhn.nauk, dotsent; DROBINSKIY, Valentin Anisimovich, inzh.; KOVNER, G.M., kand.tekhn.nauk, nauchnyy red.; KONTSEVAYA, E.M., red.; GAVRILOV, F.P., red.; OSTRIROV, N.S., tekhn.red.

[Modern locomotives] Sovremennye lokomotivy. Moskva, Vses. uchebno-pedagog.izd-vo Trudrezervizdat, 1957. 126 p. (MIRA 12:11)

(Locomotives)

GAVRILOV, P. P.

GLAZ, Abram Il'ich; GETLING, B.V., inzhener, nauchnyy redaktor; GAVRILOV, P.P., redaktor; MATUSEVICH, N.L., tekhnicheskiy redaktor

[Young electrician's manual] Spravochnik molodogo elektrotekhnika. Pod red. B.V.Getlinga. Moskva, Vses. uchebno-pedagog. izd-vo Trudrezervizdat, 1957. 256 p. (MLRA 10:10)
(Electric engineering)

GAVRILOV, F.P

BABULIN, Nikolay Alekseyevich; YASHECHKIN, B.N., nauchnyy red.; GAVRILOV, F.P., red.; RAKOV, S.I., tekhn.red.

[Designing and reading drawings for machine construction work] Postroenie i chtenie mashinostroitel'nykh rabochikh chertezhei. Moskva, Vses.uchebno-pedagog.izd-vo Trudrezerizdat, 1957. 259 p. (MIRA 10:12)

(Mechanical drawing)

KUZNETSOV, Mikhail Ivanovich; STRAKHOV, S.V., kandidat tekhnicheskikh nauk, redaktor; GAVRILOV, F.P., redaktor; OSTRIROV, N.S., tekhnicheskiy redaktor

[Principles of electric engineering] Osnovy elektrotekhniki. Izd. 5-oe, perer. Pod red. S.V.Strakhova. Moskva, Vses. uchebno-pedagog. izd-vo Trudrezervizdat, 1957. 422 p. (MLRA 10:3)
(Electric engineering)

SLOBODYANNIKOV, Sergey Stepanovich; YELIZAVETIN, M.A., kand.tekhn.nauk, nauchnyy red.; GAVRILOV, F.P., red.; RAKOV, S.I., tekhn.red.

[Ultrasonic processing of industrial products] Ul'trazvukovaia obrabotka promyshlennykh izdelii. Moskva, Vses.uchebno-pedagog. izd-vo Trudrezervizdat, 1958. 100 p. (MIRA 12:4)
(Ultrasonic waves--Industrial applications)

C-A V R I L O V, F. P.

LEVINSON, Lev Yefimovich, prof. [deceased]; KOBRINSKIY, A.Ye., doktor tekhn.nauk, nauchnyy red.; GAVRILOV, F.P., red.; KOMTSEVAYA, E.M., red.; OSTRIROV, N.S., tekhn.red.

[Theoretical mechanics with elements of the theory of mechanisms] Teoreticheskaia mekhanika s elementami teorii mekhanizmov. Izd. 3-e, ispr. Pod red. A.E.Kobrinskogo. Moskva, Vses. uchebno-pedagog. izd-vo Trudrezervizdat, 1958. 410 p. (MIRA 11:5)
(Mechanics)

NAKHUTIN, Isaak Pinkhusovich; GAVRILOV, F.P., red.; PERSON, M.N., tekhn. red.

[Equipment of a study room for machining on lathes; album of technical drawings of a special-purpose cupboard and visual aids] Oborudovanie kabinata po tokarnomu delu; al'bom rabochikh chertezhei spetsial'nogo shkafa i nagliadnykh posobii. Moskva, Vses. uchebno-pedagog. izd-vo Trudrezervizdat, 1959. 415 p. (MIRA 14:9)
(Turning—Study and teaching)

GAVRILOV, F.P., otv. red.; TROKHMAN, A.V., red.; ZYUZINA, A.A., red.; KOZHEVNIKOV, P.M., red.

[Economy of Chelyabinsk Province; statistical collection] Narodnoe khoziaistvo Cheliabinskoi oblasti; statisticheskii sbornik. Cheliabinsk, Gosstatizdat TsSU SSSR Cheliabinskoe otdnie, 1961. 177 p. (MIRA 15:3)

1. Chelyabinsk. (Province) Oblasnoye statisticheskoye upravleniye. 2. Nachal'nik Statisticheskogo upravleniya Chelyabinskoy oblasti (for Gavrilov).
(Chelyabinsk Province--Statistics)

USOV, Pavel Vasil'yevich; GAVRILOV, F.P., red.; KARPOVA, T.V., tekhn. red.

[Mechanical engineering] Mashinovedenie; posobie dlia uchashchikhsia 9 klassa sel'skikh srednikh shkol s proizvodstvennym obucheniem. Moskva, Uchpedgiz, 1963. 190 p. (MIRA 16:7)

(Mechanical engineering)

[redacted] K, Viktor Kamilovich, [redacted] ; [redacted]
F.F., red.

[Welder's handbook] Spravochnoe posobie svarshchika. Moskva, Prosveshchenie, 1964. 271 p. (MIRA 17:9)

GAVRILOV, F.T.; KISIN, V.M.

Furniture industry during Soviet rule. Der. prom. 6 no.11:3-6 N '57.
(MIRA 10:11)

1. Mosgorsovnarkhoz (for Gavrilov). 2. Minbumdrevprom RSFSR (for Kisin).

(Furniture industry)

GAVRILOV, F.T.

GAVRILOV, F.T.

Technological processes in making parquet floor boards. Der. prom. 7 no.2:24 F '58. (MIRA 11:1)

1. Moskovskiy gorodskoy sovnarkhoz.
(Parquet floors)

GAVRILOV, F.

New trend in the design and construction of furniture. Sov. torg. no. 7:23-26 Jl '58. (MIRA 11:7)

1. Nachal'nik Upravleniya mebel'noy promyshlennosti Moskovskogo gorodskogo sovnarkhoza.
(Furniture industry)

GAVRILOV, F.T.; AL'TERMAN, N.M.

Furniture industry in Moscow from 1959 to 1965. Der.prom. 8 no.3:1-3 Mr '59. (MIRA 12:4)

1. Upravleniye mebel'noy promyshlennosti Mosgorsovnarkhoza. (Moscow--Furniture industry)

GAVRILOV, F.T.

Workers of the Moscow furniture industry are striving for technical progress. Der.prom. 9 no.5:1-3 My '60. (MIRA 13:7)

1. Upravleniye mebel'noy promyshlennosti Mosgorsovnarkhoza. (Moscow--Furniture industry)

GAVRILOV, F.T.

Expansion of the furniture industry in Moscow. Der.prom. 10 no.9:11-14 S '61. (MIRA 14:10)

1. Upravleniye mebel'noy promyshlennosti Mosgorsovnarkhoza. (Moscow--Furniture industry)

GAVRILOV, F.T.

Ways for further technological progress in the sawmilling and woodworking industry. Der. prom. 14 no.4:1-3 Ap '65. (MIRA 18:5)

ACC NR: AP6026953 SOURCE CODE: UR/0115/66/000/007/0081/0084

AUTHOR: Gavrilov, F. V.; Merkulov, V. S.

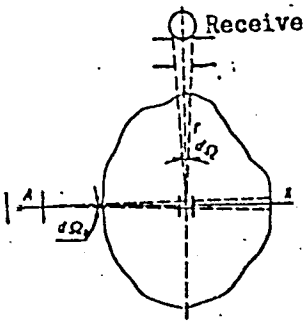
ORG: none

TITLE: Positron method of determining local gas density

SOURCE: Izmeritel'naya tekhnika, no. 7, 1966, 81-84

TOPIC TAGS: vacuumeter, vacuum measurement, positron, gas flow, rarefied gas

ABSTRACT: Optical, x-ray, and radioactive methods of determining density of rarefied-gas flow yield averaged (in the direction of probing beam) integral values. A new method of strictly local density determination is suggested which is based on measuring the annihilation radiation that arises when a positron beam traverses the gas flow being investigated (see figure). It is shown that the gas density is given by:



$$\rho(x) = \left[\frac{\psi'^{/5}(x)}{\int_0^x \psi^{-1/5}(x)\,dx + \frac{b^2}{\psi'^{/5}(0)}}\right]^{1/5}.$$

Further, it is proven that the intensity of positron radiation is approximately proportional to the gas density. A set of high-

 UDC: 533.12.083.9

ACC NR: AP6026953

efficiency scintillation counters can be used as a gamma-quanta receiver; the λ-factor may be expected to reach 10^5 quanta per min per curie of positron-source activity. A measuring error of 1% may be expected from such an instrument. Inexpensive short-living isotope Cu^{64} is suggested as a source of positrons; other long-living sources, such as Na^{22}, Co^{58}, Rh^{102}, Ni^{57}, also look promising. Orig. art. has: 4 figures and 17 formulas.

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

Card 2/2

COUNTRY : USSR
CATEGORY : Cultivated Plants - Industrial, Oleiferous, Sugar. M

ABS. JOUR. : RZhBiol., No.14, 1958, No.63479

AUTHOR : Gavrilov, G.
INST. : Scientific Research Cotton Institute
TITLE : New Fast-Maturing Large-Boll Varieties for Northern Regions of Cotton Growing.

ORIG. PUB. : Khlopkovodstvo, 1957, No. 7, 42-45

ABSTRACT : For Kara-Kalpak Autonomous SSR where climatic conditions for cotton plant cultivation are less favorable, its own fast-maturing and high-yield varieties are necessary. For this purpose, Kara-Kalpak experiment station of SoyuzNIKhI has been conducting a crossing of geographically distant forms of cotton plant. The best results are secured when local variety is taken as the maternal form, and as the paternal form - a large-boll variety from a geographically distant region. As the result of continuous work, new, large-boll, fast-maturing strains KK-2056, KK-1172 and KK-1997 have been

[Scientific Research Cotton Institute]

Card: 1/2

GAVRILOV, G.

Protective lacquers. Nauka i tekh mladezh 15 no.10: 25 0'63.

GAVRILOV, G.

Hydrogen ion concentration and its importance for galvanotechnical practice. Mashinostroene 12 no. 11:32-33 N '63.

1. RP "Elektronika", Sofiia.

GAVRILOV, G.

Improve the organization of the supply of materials and equipment. Bukhg. uchet. 15 no.11:33-34 N '56. (MLRA 9:12)

1. Glavnyy bukhgalter Upravleniya "Uralalmaz," Molotovskaya oblast'.
(Accounting) (Materials)

GAVRILOV G.
p. 2

25(3) PHASE I BOOK EXPLOITATION SOV/1672

USSR. Upravleniye po organizatsii i mekhanizatsii ucheta

Mekhanizatsiya ucheta i vychislitel'nykh rabot na promyshlennom predpriyatii; sbornik statey (Mechanization of Accounting and Computing Operations in an Industrial Establishment; Collection of Articles) Moscow, Gosstatizdat, 1957. 125 p. 5,100 copies printed.

Additional Sponsoring Agency: USSR. TSentral'noye statisticheskoye upravleniye.

Ed.: V.A. Ustiyants; Tech. Ed.: A.A. Kapralova.

PURPOSE: This book is intended for technical personnel servicing computers, tabulators, punch card machines, etc., and for those using this equipment.

COVERAGE: This collection of articles reviews various aspects of mechanical invoicing, use of key-operated calculators in account-

Card 1/4

ing, functions of interplant clearing houses, accounting of state taxes using business machines and computers, and operation of punch card machines. Technical features of computing and calculating are discussed and some measures to improve reliability are outlined. No personalities are mentioned. There are 8 Soviet references.

TABLE OF CONTENTS:

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YAKOBASHVILI, A., inzhener; GAVRILOV, G., inzhener.

Mechanically operated bodies used for transport of large-size and heavy freight and mounted on the ZIL-150 truck chassis. Avt.transp. 35 no.7:14-15 Jl '57. (MIRA 10:8)
(Motortrucks)

KUDRYASHOV, A.; SHEVYKIN, D.; YAKOBASHVILI, A., inzh.; GAVRILOV, G., inzh.

Our mail. NTO no.4:59 Ap '59. (MIRA 12:6)

1. Zamestitel' predsedatelya Leningradskogo oblastnogo pravleniya nauchno-tekhnicheskogo obshchestva santekhniki i gorodskogo khozyaystva (for Kudryashov). 2. Chlen prezidiuma dorozhnogo pravleniya Nauchno-tekhnicheskogo obshchestva zheleznodorozhnogo transporta Moskovsko-Kiyevskoy zheleznoy dorogi, g.Kaluga (for shevykin).

(Technical societies)