"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0

ACCESSION NR: AP4038936

the 2 Deuterium solutions. D_2O decreased rather than increased stainability, i.e. increased the stability of the intracellular structure. This was also reflected in thermal resistance of the contractive muscle structures. At a 1.3 C increase/min. thermal contractability in the 95% D_2 containing Ringer solution, while essentially of the same nature, appeared at an average 5.6 C higher temperature. Tests at a constant temperature of 38 C which lies between that of muscle contraction in light (35 C) and heavy water (41) showed that exchange of the initial light by heavy water led to interruption of the initial contraction after about 60 sec. Upon reversing this test, the D_2 effect disappeared after about 90 sec. This increased thermal stability is apparently caused by the weakening of all hydrogen bonds except those of the water molecule, i.e. depends upon the different nature of the solvent. Decreased sorption may be explained by the decrease of the number of free charges at the protoplasmic colloids capable of binding the dye, loss of contractability by hyperstabilization of the actomyosin complex (increase of hydrophobic interaction) and injury to the cell wall lipids. Orig. art. has: 2 figures and 4 tables.

ASSOCIATION: Fizicheskiy fakul'tet MGU (Physics Department MGU); Institut

Card 2/3

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0

ACCESSION NR: AP4038936

biologicheskoy fiziki AN SSSR, Moscow (Institute of Biophysics, AN SSSR)

SUBMITTED: 22Feb63 DATE ACQ: 09Jun64 ENCL: 00

SUB CODE: LS NO REF SOV: 003 OTHER: 013

Card 3/3

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0

KONDRASHOVA, M.N.; KORNIYENKO, I.A.

Rhythmic form of the muscle activity in response to the constant electric impulsation. Biofizika 10 no.1:56-63 '65.

(MIRA 18:5)

1. Institut normal'noy i patologicheskoy fiziologii AMN SSSR, Moskva, fizicheskiy fakul'tet Moskovskogo gosudarstvennogo universiteta imeni Lomonosova i Institut biologicheskoy fiziki AN SSSR, Moskva.

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0

KORNIENKO, I. M.

"Influence of the Background of the Sugar Beet Mother Plant on the Seed Productivity of the Transplanted Plant and of Later Generations Which are Processed Industrially." Cand Agr Sci., Belotserkov Experimental Selection Station, Belaya Tserkov', 1953. (RZhBiol, No 1, Sep 54)

SO: Sum 432, 29 Mar 55

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0

KORNIYENKO, I.M.; LAVROV, A.F.

Results of the study of the regime of underground waters in the Polesye Lowland (1947-1957). Trudy VSEGINGEO no.10:158-167 '64. (MIRA 17:10)

1. Belorusskaya gidrogeologicheskaya stantsiya.

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0

KORNIENKO, I. N., Chief Vet.
Graivoronsk Raion Dept. of Agric., Kursk oblast.
"Dehelminthization with the extract from male fern in hymenolepiasis of geese."
SO: Vet. 26(8), 1949, p 33

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0

KORNIYENKO, I.P.[Korniienko, I.P.]

Proposals of efficiency promoters of the Gorodok Canned Milk Plant. Khar. prom. no.1:50-52 Ja-Mr '63. (MIRA 16:4)

(Gorodok(Kamenets Podolski Province)—Canning industry—Equipment and supplies)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0

KORNIYENKO, K.

Following the call of the time. Sov. profsoiuzy 18 no.5: 30-31 Mr '62. (MIRA 15:3)

1. Predsedatel' kul'tkomissii zavodskogo komiteta sudostroitel'nogo zavoda imeni Nosenko, g. Nikolayev.
(Nikolayev--Shipbuilding workers)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0

KRICHEVSKIY, R.M.; KORNIYENKO, K.I.

Method of developing mining sections which precludes the formation of sudden outbursts. Vop. bezop. v ugol'. shakh. 13:85-109 '62. (MIRA 16:5)

(Coal mines and mining) (Mine gases)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0

KORNIYENKO, K.L., fel'dsher

Spray cart. Gig. i san. 24 no.5:59-60 My '59. (MIRA 12:7)

1. Iz otdele profilakticheskoy dezinfektsii g. Bol'tsy Moldavskoy SSR.

(INSECTICIDES,
spray cart (Rus))
(ANTISEPSIS AND ASEPSIS,
same)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0

ACCESSION NR: AP4009135 S/0056/63/045/006/2068/2069

AUTHOR: Lazarev, B. G.; Khorenko, V. K.; Korniyenko, L. A.; Krivko, A. I.; Matsakova, A. A.; Ovcharenko, O. N.

TITLE: On the layered and filamentlike structure of the superconducting alloys Nb-Zr and Nb-Ti

SOURCE: Zhurnal eksper. i teoret. fiziki, v. 45, no. 6, 1963, 2068-2069

TOPIC TAGS: superconducting alloy, niobium zirconium alloy, niobium titanium alloy, layered structure, filament structure, electron microscopic investigation, plastic deformation, critical magnetic field, solid solution, saturated solid solution, critical current density

ABSTRACT: Data are presented on electron-microscopic observations of thin films and filamentary systems of tracks in alloys of Nb with 25 at. % Zr and of Nb with 66 at. % Ti. Samples of the original alloy were compared with samples reduced in thickness by rolling from 2-5 mm to 0.05-0.5 mm at room temperature. When observed by

Card 1/2

SUB CODE: PH, MA NO REF SOV: 007 OTHER: 003

Card 2/2

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0

KORNIYENKO, L.S.

56-3-44/59

AUTHORS: Korniyenko, L.S., Prokhorov, A.M.

TITLE: The Fine Structure of the Spectrum of the Paramagnetic Electron Resonance of the Fe^{3+} Ions in the Lattice of Al_2O_3 (Ton'kaya struktura spektra elektronnogo paramagnitnogo rezonansa ionov Fe^{3+} v reshetke Al_2O_3) (Letter to the Editor)

PERIODICAL: Zhurnal Eksperim. i Teoret. Fiziki, 1957, Vol. 33, Nr 3(9), pp. 805 - 807 (USSR)

ABSTRACT: The Fe^{3+} ions were introduced isomorphically into the Al_2O_3-lattice. The spectrum mentioned in the title was investigated at room temperature, at 3 frequencies of $2,5^{10}$ - 4.10^{10} at field strengths of up to 16.200 Örsted. The following results were obtained: The Fe^{3+} ions form 2 systems of not equivalent ions and each of these systems furnishes a spectrum consisting of 5 resonance lines. If the outer magnetic field is applied parallel or vertical to the axis of the crystal, both spectra blend. This tends to confirm the existence of a similar direction of the axial crystal field for both ion systems. If the direction of the outer magnetic field deviates strongly from the parallel or vertical direction, the lines of both

Card 1/2

Card 2/2

APPROVED FOR RELEASE

KORNIYENKO, L.S.

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0

KORNIYENKO, A.S.

[illegible]

[illegible]

[illegible]

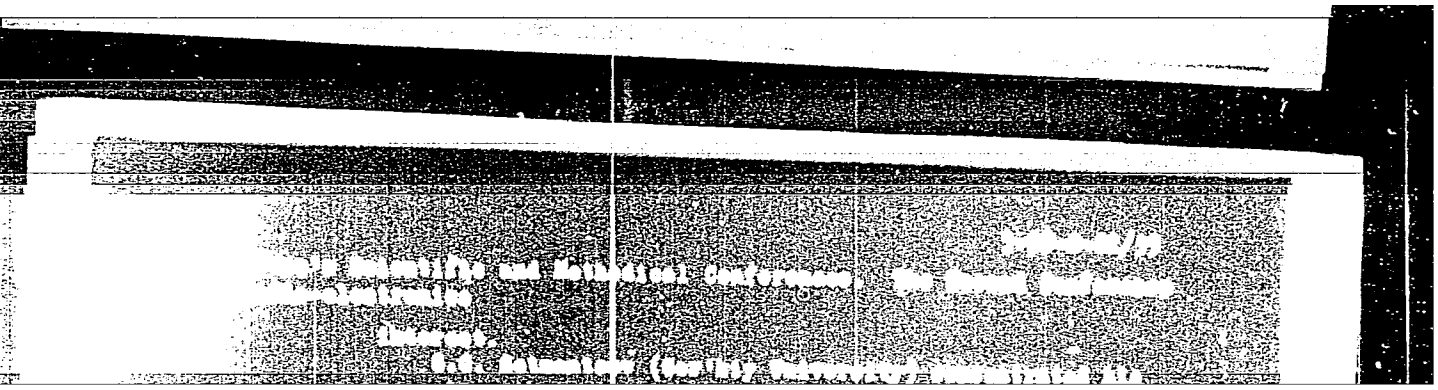
[illegible]

[illegible]

[illegible]

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0



APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0

SOV/56-34-6-50/51

AUTHORS: Zverev, G. M., Korniyenko, L. S., Manenkov, A. A., Prokhorov, A. M.

TITLE: A Paramagnetic Amplifier and Generator on the Basis of Chromic Corundum (Paramagnitnyy usilitel' i generator na khromovom korunde)

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1958, Vol. 34, Nr 6, pp. 1660-1661 (USSR)

ABSTRACT: The spectrum of Cr^{3+} in corundum was investigated in previous papers (Refs 6-9). The ion Cr^{3+} within the corundum is placed in an axial electromagnetic field which splits up the spin quadruplet of the lower singlet orbital level into 2 dublets with the distance 2D = - 0,3824 cm^{-1} between them. For the construction of the paramagnetic amplifier the authors use the levels which (in the case that the crystal axis is orientated parallelly to the external constant paramagnetic field) are characterized by the quantum numbers M = 3/2, $\pm$ 1/2. If the crystal axis is turned the states are intermixed and the transitions between all 3 levels are allowed. The levels

Card 1/2

CIA-RDP86-00513R000824720017

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0

A Paramagnetic Amplifier and Generator on the Basis of Chromic Corundum SOV/56-34-6-50/51

M = - 1/2, 1/2 are used for the amplification and the auxiliary radiations excitate the transitions between the levels M = 1/2, -3/2. The frequency at which the amplification (or the generation) is carried out is equal to ~3000 megacycles and the frequency of the auxiliary radiation was equal to ~15000 megacycles. At T ~ 2°K the system was excitated by itself and changed over to the function of a generator. The exact data concerning this amplifier will be published later. The authors thank A. I. Shal'nikov for his help in carrying out the experiments at low temperatures. There are 1 figure and 10 references, 6 of which are Soviet.

ASSOCIATION: Fizicheskiy institut im. P.N. Lebedeva Akademii nauk SSSR (Physics Institute imeni P.N. Lebedev, AS USSR)

SUBMITTED: April 1, 1958

Card 2/2

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0

21(1)

AUTHORS: Korniyenko, L. S., Prokhorov, A. M. SOV/56-36-3-41/71

TITLE: A Paramagnetic Amplifier and Generator with Fe^{3+}-Ions in Corundum (Paramagnitnyy usilitel' i generator na ionakh Fe^{3+} v korunde)

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, March 1959, Vol 36, Nr 3, pp 919-920 (USSR)

ABSTRACT: In this "Letter to the Editor" the authors publish the results obtained by their investigations of the possibility of producing a Fe^{3+}-ion amplifier and -generator. The electron spectrum of the paramagnetic resonance of these ions in the Al_2O_3-lattice has already been investigated in a previous paper (Ref 9). The Fe^{3+}-ion is in the s-state and has the electron spin S = 5/2; in corundum it forms two noneqivalent systems. For the case of the presence and absence of the external magnetic field details of the energy- and spin levels of these systems are discussed. For the distance of the 3 doublets of the 6 spin levels of the individual systems in the absence of the external magnetic field the values

Card 1/2

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0

0.39 and 0.62 cm^{-1} are given. From the intensity ratio of spectral lines at 290 and 4.2°K it is concluded that the lowest spin doublet in strong magnetic fields splits up to levels to which the magnetic quantum numbers $M = \pm 1/2$ correspond, i. e. the sign of the constants of the spin Hamiltonian D is positive. For the paramagnetic amplifier such levels were used as were characterized by the quantum numbers M = -5/2, -3/2, and -1/2. For amplification the levels with M = -3/2, -1/2 and the transitions induced by auxiliary radiation between the levels with M = -5/2, -1/2 were used. Amplification and production were observed at 1.8°K on the 3.2 cm wave (auxiliary radiation ~1.2 cm). The constant magnetic field had an intensity of ~1200 oersted. There are 9 references, 2 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet (Moscow State University)

SUBMITTED: November 27, 1958

Card 2/2

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0

31757
S/058/61/000/011/010/025
A058/A101

24.7900

AUTHORS: Zverev, G.M., Korniyenko, L.S., Prokhorov, A.M.

TITLE: Investigation of electron paramagnetic resonance of iron-group ions in corundum

PERIODICAL: Referativnyy zhurnal. Fizika, no. 11, 1961, 130, abstract 11V267 (V sb. "Paramagnitn. rezonans". Kazan', Kazansk. un-t, 1960, 7)

TEXT: The electron paramagnetic resonance of Fe, Co, V, Cr and Cu ions in the corundum lattice was experimentally investigated in a wide frequency (40,000-10,000 Mcps) and temperature (290°-1.7°K) range. The observed spectra were given a pertinent theoretical interpretation, and the values of the spin Hamiltonian constants were determined. Electron paramagnetic resonance of Cu ions in corundum was not detected. The valence states of ions in corundum were determined, and relaxation times at liquid He temperature were evaluated. The feasibility of using Cr and Fe ions in corundum to design paramagnetic amplifiers was experimentally demonstrated.

[Abstracter's note: Complete translation]

Card 1/1

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0

83615

S/056/60/038/005/048/050
B006/B063

24.7900

AUTHORS: Korniyenko, L. S., Prokhorov, A. M.

TITLE: Electron Paramagnetic Resonance of the Ti^{3+} Ion in Corundum

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1960, Vol. 38, No. 5, pp. 1651 - 1652

TEXT: Electron paramagnetic resonance of Ti^{3+} ions has hitherto been observed only in iron-titanium alum. The authors stressed the difficulties of interpreting the results obtained. In the present work, the authors have found e.p.r. in Ti^{3+} ions at the temperature of liquid helium. These ions were isomorphously introduced into Al_2O_3. Three samples having a mean titanium concentration of some hundredths at% were examined at a wavelength of ~ 3 cm. One slightly asymmetric e.p.r. line (cf. photograph) was found. The behavior of this line with a change of the angle θ between the direction of the constant H-field and the trigonal axis of the electric field of the crystal is theoretically studied with the spin Hamiltonian, and the g-factors are calculated and estimated to

Card 1/2

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0

24,7900

25184
S/056/61/040/006/005/031
B102/B214

AUTHORS: Korniyenko, L. S., Prokhorov, A. M.

TITLE: Electron paramagnetic resonance of the Fe^{3+} ion in corundum

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 40, no. 6, 1961, 1594 - 1601

TEXT: The authors of this paper discovered the paramagnetic resonance spectrum of the Fe^{3+} ions in corundum in 1957 (ZhETF, 33, 805, 1957), and later showed that this makes corundum a suitable material for the manufacture of paramagnetic amplifiers (ZhETF, 36, 919, 1959). In this connection, more accurate studies of the electron paramagnetic resonance (e.p.r.) of iron ions in corundum have now been carried out. e.p.r. spectra are very precisely measured for the cases of normal and parallel orientation of the trigonal axis of the crystal with respect to the external magnetic field at frequencies of $(9 - 10)\cdot 10^9$ cps, and temperatures of 290, 77, 4.2, and 2°K. The values of the constants of the spin-Hamil-

Card 1/8

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0

tonian at various temperatures could be determined from these measurements. Direct measurements of the initial energy splittings of the ground state levels (for zero magnetic field) were also made at 290, and 4.2°K, and the spin-lattice relaxation time τ_1 at 4.2°K was determined. The concentrations of the paramagnetic ions in the samples studied amounted to 0.02 and 0.002%. As was shown in a previous paper, the e. p. r. spectrum of the Fe^{3+} ions can be explained by means of the spin-Hamiltonian

$$\hat{\mathcal{H}} = g\beta H\hat{S} + D[\hat{S}_z^2 - \tfrac{1}{3}S(S+1)] + \tfrac{1}{6}a[\hat{S}_\xi^4 + \hat{S}_\eta^4 + \hat{S}_\zeta^4 - \tfrac{1}{5}S(S+1)(3S^2 + 3S - 1)] + \tfrac{1}{180}F[35\hat{S}_z^4 - 30S(S+1)\hat{S}_z^2 + 25\hat{S}_z^2 - 6S(S+1) + 3S^2(S+1)^2]; \quad (1)$$

(g is the spectroscopic splitting factor when the splitting is assumed to be isotropic, β is the Bohr magneton, $\hat{S}$ is the electron spin operator,

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0

$\hat{S}_i$ are the operators of the projections to the corresponding axes with the eigenvalue $S = 5/2$, a is the cubic crystal field constant, and D and F are the trigonal crystal field constant). The coordinates ξ, η, ζ correspond to the cubic axes, and z corresponds to the trigonal one (which coincides with the [111] direction in the system ξ, η, ζ). The Euler angles for the transition from one system of coordinates to the other are determined, dimensionless coefficients are introduced, and the diagonal matrix for the operator S_z of the system of ions Fe^{3+} and Al^{3+} is given. The cases of parallel and perpendicular orientation of $\vec{H}$ are separately discussed. Table 1 gives the experimental results for parallel orientation and Fe^{3+} concentration of 0.02%. For this concentration, the half widths of the 1st, 4th, and 5th lines were equal to 10 ± 2 oe and were dependent on the temperature; for the 2nd and 3rd they were strongly frequency dependent and lay between 20 and 30 oe. A comparison of the measurements at 2 and 4.2°K showed no difference in the values of the constants of the spin-Hamiltonian. Measurements of the e.p.r. spectrum were also made for parallel orientation at 290°K and a paramagnetic ion concentration of 0.002%. It was found from these measurements that the

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0

possible divergences of the spin-Hamiltonian constants from the values given in Table 2 lie within the experimental error. It is seen that the constants D, a-F, and |a| increase at the same rate with decreasing temperature, while g remains practically constant. The results are in good agreement with those of Bogle and Simmons except for |a|.

Table 2

Constants	Values of the constants of the spin-Hamiltonian for the Fe^{3+} ion in corundum		
	290°K	77°K	4.2°K
g	2.0030±0.0006	2.0032±0.0007	2.0029±0.0007
D, oe	+1796.4±0.4	+1836.2±0.6	+1838.5±0.6
a - F, oe	+ 353.2±0.4	+362.6±0.5	+ 362.7±0.5
a , oe	248.7±1.0	254.1±1.3	253.5±1.3

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0

The experimentally observed spectrum for perpendicular orientation can also be described by the Hamiltonian (1) and the constants from Table 2 (for parallel orientation!). The energy level difference corresponding to the resonance transitions can be calculated from that experimental value of the resonance field. A comparison of experimental and theoretical results is made in Table 3. Direct measurements of the primary splittings (ground state (^6S) spin doublet) at 290 and 4.2°K gave the following values:

	T = 290° K	T = 4,2° K
Δ_1, мгец:	11768±4 (11759 ±6)	12046±13 (12044±6)
Δ_2, мгец:	18873±11 (18860±6)	19298± 3 (19291±6),

Δ_1 is the energy difference between the middle and the lower doublet, and Δ_2 that between the upper and the middle doublet (in Mc/sec). The values in parentheses have been calculated with the help of the constants of the

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0

spin-Hamiltonian at h=0 according to the equation

$$\Delta_{2,1} = \sqrt{\left[3D + \frac{1}{6}(a - F)\right]^2 + \frac{20}{9}a^2} \pm \left[D - \frac{3}{2}(a - F)\right].$$

τ_1-measurement gave for a Fe^{3+} concentration of 0.002% the value of $(12\pm1)\cdot10^{-3}$ sec, and for a Fe^{3+} concentration of 0.02% the value of $(8\pm1)\cdot10^{-3}$ sec. The authors thank R. P. Bashuk, and A. S. Bebchuk for supplying the samples; G. A. Feshchenko (deceased) for discussions; and V. A. Kozlov, and N. G. Slovetskaya for help in measurements. V. M. Vinokurov, M. M. Zaripov, and N. R. Yafayev are mentioned. There are 3 figures, 23 tables, and 10 references: 3 Soviet-bloc and 7 non-Soviet-bloc. The most important references to English-language publications read as follows: M. H. L. Pryce. Phys. Rev. 80, 1107, 1950; M. J. D. Powell et al. Phys. Rev. Lett., 5, 145, 1960; G. S. Bogle, H. F. Simmons. Proc. Phys. Soc. 73, 531, 1959.

ASSOCIATION: Institut yadernoy fiziki Moskovskogo gosudarstvennogo uni-

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0

25184

Electron paramagnetic resonance ... S/056/61/040/006/005/031
B102/B214

versiteta (Institute of Nuclear Physics of Moscow State University)

SUBMITTED: January 4, 1961

Legend to Table 1: 1) temperature, 2) frequency in Mc/sec, 3) resonance values of the magnetic field (in oe) corresponding to the given transitions.

Температура, °K (1)	Частота, мгц (2)	Резонансные значения магнитного поля (Oe), соответствующие различным переходам (3)				
		3 ⟷ 2	2 ⟷ 4	2 ⟷ 4	2 ⟷ 3	1 ⟷ 2
290	9641,7	752,5 (752,5)	3489,3 (3490,5)	3595,6 (3595,3)	7624,8 (7624,6)	10147,2 (10146,8)
77	9838,4	778,8 (778,7)	3589,3 (3587,7)	3658,5 (3657,6)	7789,9 (7789,7)	10363,1 (10363,0)
4,2	9846,8	779,4 (779,8)	3592,8 (3592,5)	3663,0 (3662,5)	7798,0 (7798,0)	10375,5 (10375,7)

Card 7/8

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0

SHAVLOV, A.[Schawlow,A.]; FOGEL", S.[Fogel,S.]; DALBERDZHER, L. [Dulberger, L.]; KORNIYENKO, L.S.[translator]; ZVEREV, G.M. [translator]; MARKOV, V.N.[translator]; SHMAONOV, T.A., red.; POPOV, R.Yu., red.; IOVLEVA, N.A., tekhn. red.

[Optical masers (lasers)Opticheskie kvantovye generatory (lazery). Moskva, Izd-vo inostr. lit-ry 1962. 114 p. Translated from the English. (MIRA 15:11)

(Masers)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0

KORNIYENKO, L. S.; PROKHOROV, A. M.

"ESRand Spin Lattice Relaxation of Ti^{3+}, in Al_2O_3 "
Report presented at the First International Conference on Paramagnetic Resonance, Jerusalem, Israel, 16-20 July 1962

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0

34231
S/181/62/004/002/014/051
B102/B138

24,7900 (1055,1144,1163)

AUTHORS: Zverev, G. M., Korniyenko, L. S., Prokhorov, A. M., and Smirnov, A. I.

TITLE: Electron paramagnetic resonance and spin-lattice relaxation of the Er^{3+} ion in a CdF_2 single crystal

PERIODICAL: Fizika tverdogo tela, v. 4, no. 2, 1962, 392-395

TEXT: Er^{3+} was introduced as an isomorphic impurity into CdF_2, in which the fluor ions form a cubic lattice, the Cd ions being in the centers of cubes formed by the anions. The Er^{3+} ions replace Cd ions. The e. p. r. measurements were made at 4.2°K, with several different frequencies and for an Er^{3+} concentration of 0.1%. The following spectrum parameters were determined:

Card 1/4

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0

34231

Electron paramagnetic resonance and ... S/181/62/004/002/014/051
B102/B138

ν, Mc/sec	g	A, oe
9500	6.758±0.010	73.0±1.0
25800	6.745±0.005	-
72000	6.735±0.005	73.9±1.0

The frequency dependence of the g-factor is due to the contributions of the wave functions of the excited states. The field-induced change of the g-factor can be determined by using perturbation theory:

$$g = g_0 \left[1 - \frac{\Lambda^2 \beta^2 H^2}{\delta^2} \left| \langle 1 | \hat{J}_z | 2 \rangle \right|^2 \right]$$

4

g_0 is the g-factor at H=0, Λ - Landé factor, δ is the mean distance to the nearest upper level of the state group (2): $\left\{ \pm \frac{13}{2}, \pm \frac{5}{2}, \mp \frac{3}{2}, \mp \frac{11}{2} \right\}$

Card 2/4

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0

34231

Electron paramagnetic resonance and ... S/181/62/004/002/014/051
B102/E1

$\langle 1|$ and $|2\rangle$ denote the ground and excited states. $A = (2.31 \pm 0.03) \cdot 10^{-2} cm^{-1}$. Spin-lattice relaxation was studied by the continuous saturation method and by the pulse method with 3.2 cm waves. The temperature dependence of relaxation time τ_1 was determined by several methods, e. g. between 16 and 18°K from epr line broadening. Though S. A. Al'tshuler has developed a theory of spin-lattice relaxation of rare-earth ions, (ZhETF, 24, 69[illegible], 1953), the experimental results for Er^{3+} ions in a cubic lattice can only be explained qualitatively. At $T < 4.2°K$, $\tau_1 \sim T^{-1}$, at higher temperatures the course of $\tau_1(T)$ cannot be described by an exponential law of the $\tau_1 \sim T^{-n}$ type. This is due to anomalies caused by other bi- and trivalent ions. L. M. Belyayev, Kh. S. Bagdasarov and V. Ya. Khaimov-Mal'kov and P. P. Pashinin are thanked for help. There are 1 figure, 1 table, and 13 references: 5 Soviet and 8 non-Soviet. The four most recent references to English-language publications read as follows: M. Dvir, W. Low. Proc. Phys. Soc., 75, 136, 1960; W. Low. Paramagnetic Resonance in Solids. p. 130, New York - London.

Card 3/4

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0

34231
S/181/62/004/002/014/051
B102/B138

Electron paramagnetic resonance and ...

1960; C. B. P. Finn et al. Proc. Phys. Soc., B77, 261, 1961; J. M. Baker et al. Proc. Phys. Soc. B73, 942, 1959.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova (Moscow State University imeni M. V. Lomonosov)

SUBMITTED: August 14, 1961

Fig. Time dependence of τ_1 for Er^{3+}.

Card 4/4

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0

KORNIYENKO, L.S.; FESHCHENKO, G.A. [deceased]

Calculation of the matrix elements of the transitions between Fe^{3+} ion levels in corundum for an important practical case. Radiotekh. i elektron 7 no.7:1241-1243 '62. (MIRA 15:6)
(Paramagnetic resonance and relaxation) (Ferrates)
(Corundum)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0

33995
S/056/62/042/001/009/048
B125/B108

24.7900 (1055,1144,1163)

AUTHORS: Korniyenko, L. S., Pashinin, P. P., Prokhorov, A. M.

TITLE: The spin-lattice relaxation time of the Ti^{3+} ion in corundum

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 42, no. 1, 1962, 65 - 66

TEXT: The time of spin-lattice relaxation of the Ti^{3+} ion in corundum was measured with the method of pulsed saturation at liquid helium temperatures by means of an apparatus described by P. P. Pashinin and A. M. Prokhorov (ZhETF, 40, 49, 1961). Earlier estimates by L. S. Korniyenko, A. M. Prokhorov (ZhETF, 38, 1651, 1960) have yielded a general form of the temperature dependence of τ_1. A saturating pulse of 10 - 20 microseconds with a peak power of ~1 watt produced at $2^{\circ}K$ a sharp sag in the epr line. The external magnetic field was parallel to the trigonal axis of the crystal. By applying the saturating pulses every four modulation (50 cps) periods of the magnetic field it was possible to observe the behavior of the sag in the line between two successive pulses. The first epr line corresponds to the application of the saturating pulse.

Card 1/3

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0

33995

The spin-lattice relaxation... S/056/62/042/001/009/048
B125/B108

The sag of the paramagnetic line observed at the subsequent passages of the magnetic field through resonance is less than 5 oersteds wide. Its depth decreases with the characteristic time $\tau = (5 \pm 1) \cdot 10^{-2}$ sec. If the width of the sag remains constant during observation, τ is simply the time τ_1 of spin-lattice relaxation. $\tau_1 > \tau$ in the case that the sag width decreases (not observed in the present experiments) owing to cross relaxation within the line. No sag in the line was observed at 4.2°K since the saturation power was too low. The appearance of a sag in the epr line at 2°K under the action of a brief saturating pulse may be explained as follows: If the Ti^{3+} ion arrives exactly at the place of the Al^{3+} ion in the lattice, $g_\perp$ and the intensity of epr lines become zero when the external magnetic field is parallel to the trigonal axis of the crystal. With randomly distributed Ti^{3+} ions, the values of $g_\perp$ for the individual ions are different from zero, and the resulting non-zero contribution to the epr line is the greater the more the position of the Ti^{3+} ion departs from the corresponding zero value of $g_\perp$. Because of the random distribution of the ions in the crystal, ions with similar

Card 2/3

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0

33995

The spin-lattice relaxation... S/056/62/042/001/009/048
B125/B108

g-factors may be far from one another, which renders their cross-relaxation interaction difficult. On the other hand, this interaction is very weak within the line owing to the small value of $g_{\perp}$. R. P. Bashuk and A. S. Bebchuk are thanked for having prepared the samples, and G. M. Zverev for discussions. There are 1 figure and 2 Soviet references.

ASSOCIATION: Institut yadernoy fiziki Moskovskogo gosudarstvennogo universiteta (Institute of Nuclear Physics of Moscow State University)

SUBMITTED: July 26, 1961

Card 3/3

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0

S/053/62/077/001/001/003
B117/B112

AUTHORS: Zverev, G. M., Karlov, N. V., Korniyenko, L. S., Manenkov, A. A., Prokhorov, A. M.

TITLE: Application of paramagnetic crystals in quantum electronics

PERIODICAL: Uspekhi fizicheskikh nauk, v. 77, no. 1, 1962, 61 - 108

TEXT: Western and Soviet studies during the period 1932 - 1962 concerning the progress in the application of paramagnetic crystals for building quantum devices are reviewed. In these devices, which are used in the fields of radio and optics, negative temperatures are produced by auxiliary radiation. The following problems are discussed: energy levels of paramagnetic ions in crystals; relaxation phenomena in paramagnetic crystals; (paramagnetic) quantum amplifiers of the radio range (paramagnetic resonance amplifier РПУ (RPU), paramagnetic progressive wave amplifier ПУБВ (PUBV)); quantum generators and amplifiers of the optical range (optical quantum generators with ruby and fluorite, quantum amplifiers, quantum counters). Finally, the great progress achieved in quantum electronics during the short time of its existence is pointed out.

Card 1/2

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0

establishment of highly accurate frequency standards for various purposes; development of low-noise paramagnetic amplifiers of the radio range and of optical generators having a high degree of coherence and high spectral radiation density. The quick progress of quantum electronics and its promising prospects, are the consequence of its development on the basis of already existing technology. Progress was first achieved in the radio range, and later in the optical range. At present work is in progress in developing the entire range, including the submillimeter- and distant infrared range. There are 27 figures and 134 references: 45 Soviet-bloc and 99 non-Soviet-bloc. The four most important English-language references are: J. R. Singer and S. Wang, Second International Conference on Quantum Electronics, Berkeley, 1961; W. G. Wagner and G. Birnbaum, Second International Conference on Quantum Electronics, Berkeley, 1961; R. W. Hellwarth, Phys. Rev. Lett., v. 6, 19 (1961); A. L. Schawlow, G. E. Devlin, Phys. Rev. Lett., v. 6, 96 (1961).

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0

L 10018-63 EWA(k)/EWP(e)/EWP(q)/BDS/EWT(1)/EWT(m)/3W2/EEC(b)-2/ES(t)-2--
AFFTC/APGC/AFWL/ASD/ESD-3/RADC/SSD--Pf-4/Pl-4/Po-4--IJP(C)/WH/K/WG/JHB/EH

ACCESSION NR: AP3001288 S/0181/63/005/006/1668/1672

AUTHOR: Kask, N. Ye.; Korniyenko, L. S.; Smirnov, A. I. 88

TITLE: Paramagnetic relaxation of Fe sup 3+ ions in corundum 15

SOURCE: Fizika tverdogo tela, v. 5, no. 6, 1963, 1668-1672

TOPIC TAGS: paramagnetic relaxation, Fe sup 3+, corundum

ABSTRACT: Spin-lattice relaxation-time measurements have been carried out in Fe sup 3+ ions in corundum by the method of pulse saturation and in some cases by transverse saturation. The study involved transitions between different spin levels, as well as parallel and perpendicular orientations of samples of various ion concentration. The temperature dependence of relaxation times was found to be strikingly less marked within the range of 5 to 15K than at higher readings (up to 80K). The increase of paramagnetic ion concentration from 0.02 to 0.05% brought about a reduction of relaxation time from 10 to 1.5 msec. Relaxation times were computed for various lines at frequencies at which cross-relaxation would be absent; with parallel orientation they amounted to 13 to 14 msec for all five transitions, and with

Card 1/2

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0

L 10018-63
ACCESSION NR: AP3001288

perpendicular orientation to 10 and 7 msec for the first and second transitions, respectively. The influence of spin cross-relaxation was found to be strongest with parallel orientation. Orig. art. has: 3 formulas, 4 figures, and 2 tables.

ASSOCIATION: none

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

SUB CODE: 00 NO REF SOV: 003 OTHER: 005

Card 2/2

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0

L 14525-63 EWA(k)/EWP(k)/BDS/3W2/EEC(b)-2/ES(t)-2/EWT(1) AFFTC/ESD-3/
ASD/RADC/AFGC/AFWL/SSD Pf-4/Pi-4 GG/JHB/WG/IJP(C)/K/EH
ACCESSION NR: AP3005341 S/0181/63/005/008/2303/2305

AUTHOR: Kask, N. Ye.; Korniyenko, L. S.; Prokhorov, A. M.; Fakir, M.

84
83

TITLE: Electron paramagnetic resonance and spin-lattice relaxation of the Nd^{3+} impurity ion in the $CaWO_4$ single-crystal lattice

SOURCE: Fizika tverdogo tela, v. 5, no. 8, 1963, 2303-2305

TOPIC TAGS: electron paramagnetic resonance, Nd^{3+} ion, spin-lattice relaxation, calcium tungstate crystals, neodymium-doped calcium tungstate

ABSTRACT: A study of EPR spectra and spin-lattice relaxation of the Nd^{3+} ion in the $CaWO_4$ lattice has been carried out at liquid helium temperatures on the 3-cm band. The observed spectrum consisted of one intense line produced by even isotopes and two systems of eight components each produced by odd isotopes Nd^{143} and Nd^{145}. Angular dependence of the spectrum indicated a tetragonal symmetry of the crystal field surrounding the ion. Perpendicular and parallel g-factors and the superfine splitting factors for the odd isotopes were determined. It is shown that at temperatures above 6K the relaxation is determined by nonresonant two-phonon processes. Below that temperature, where single-phonon processes

Card 1/2

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0

L 14525-63

ACCESSION NR: AP3005341

should predominate, observation of spin-lattice relaxation becomes difficult because of the phonon "narrow bottleneck" effect. When the thermal equilibrium of the spin system is weakly disturbed, as in the case of sufficiently small power of the saturation pulses, the "narrow bottleneck" effect is not observed, and the temperature variation of the spin-lattice relaxation can be determined. Orig. art. has: 1 figure and 3 formulas.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova (Moscow State University)

SUBMITTED: 02Feb63 DATE ACQ: 06Sep63 ENCL: 00

SUB CODE: PH NO REF SOV: 001 OTHER: 003

Card 2/2

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0

L 24970-63 EWA(k)/EPF(n)-2/EWT(1)/EWP(q)/EWT(m)/BDS/T-2/3W2/EEC(b)-2/
ES(t)-2 AFFTC/ASD/ESD-3/RADC/APGC/AFWL/SSD Pu-4/Pi-4 GG/WH/WG/JHB/LJP(C)/K/EH
ACCESSION NR: AP3005342 S/0181/63/005/008/2306/2309

AUTHOR: Kask, N. Ye.; Korniyenko, L. S.; Mandel'shtam, T. S.; Prokhorov, A. M.

TITLE: Spin-lattice relaxation of the Ti^{3+} ion in corundum

SOURCE: Fizika tverdogo tela, v. 5, no. 8, 1963, 2306-2309

TOPIC TAGS: spin-lattice relaxation, single-phonon process, Ti^{3+} ion, titanium-doped corundum, electron paramagnetic resonance, pulse-saturation method

ABSTRACT: The spin-lattice relaxation of the Ti^{3+} ion in corundum has been studied by the pulse saturation method. Experiments were conducted using a superheterodyne spectroscope in the 3-cm band. A cryogenic cavity was employed which allowed rotation of the sample around two mutually perpendicular axes and thus permitted all possible orientations of the crystal axis with respect to the external magnetic field for crystals with axial symmetry. The temperature dependence of spin-lattice relaxation in the 1.7 to 3.5K range was determined. It was shown that below the 2K relaxation is determined by single-phonon processes and the relaxation time varies as $e \exp(d/kT)$ at $d = (30 \pm 3)$ cm^{-1}. The dependence of relaxation time in single-phonon processes on the external magnetic field determined on the basis of other relationships and the value of the experimentally

Card 1/2

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0

L 14970-63
ACCESSION NR: AP3005342

obtained splitting factor are in good qualitative and quantitative agreement with experimental results. "The authors thank G. M. Zverev for a fruitful discussion of results of the present work." Orig. art. has: 3 figures and 2 formulas.

ASSOCIATION: Moskovskiy gosudarstvenny*y universitet im. M. V. Lomonosova (Moscow State University)

SUBMITTED: 02Apr63 DATE ACQ: 06Sep63 ENCL: 00

SUB CODE: PH NO REF SOV: 008 OTHER: 001

Card 2/2

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0

AMENITSKIY, N.A.; KORNIYENKO, L.S.; SMIRNOV, A.I.

Spectroscope for studying the spectrum and spin-lattice relaxation of paramagnetic substances at a wavelength of 8 mm. Prib. i tekh. eksp. 8 no.6:119-121 N-D '63. (MIRA 17:6)

1. Nauchno-issledovatel'skiy institut yadernoy fiziki Moskovskogo gosudarstvennogo universiteta.

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0

ACCESSION NR: AP4013521 S/0181/64/006/002/0549/0553

AUTHORS: Kask, N. Ye.; Korniyenko, L. S.; Fakir, M.

TITLE: Electron paramagnetic resonance and spin lattice relaxation of the Nd^{3+} ion in single crystals of CaF_2

SOURCE: Fizika tverdogo tela, v. 6, no. 2, 1964, 549-553

TOPIC TAGS: electron paramagnetic resonance, spin lattice relaxation, Nd^{3+} ion, CaF_2, single crystal, fluorite, tetragonal spectrum, tetragonal symmetry, orthorhombic spectrum, orthorhombic symmetry, absorption line, g factor, paramagnetic ion

ABSTRACT: The authors studied the spectra of ions in crystalline fields of tetragonal and orthohombic symmetry at a frequency of 9500 megacycles. All crystals investigated showed identical spectra corresponding to the tetragonal and orthorhombic symmetry in the vicinity of the paramagnetic ion. With increase in the concentration of Nd ions from 0.3 to 1% the orthorhombic spectrum grew in intensity relative to the intensity of the tetragonal spectrum at a rate approximately proportional to the square of the concentration. The orthorhombic spectrum

Card 1/3

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0

ACCESSION NR: AP4013521

may consequently be due to the replacement of three Ca^{2+} ions by two paramagnetic trivalent atoms. Measurements of the principal values of the g factors gave $g_{\parallel} = 4.410 \pm 0.010$ and $g_{\perp} = 1.300 \pm 0.003$. The width of the absorption line at half intensity and when the external magnetic field was parallel to the tetragonal axis of the crystalline field was found to be 10 oersteds. The dependence of the spin-lattice relaxation time on temperature is shown in Fig. 1 of the Enclosure. "The authors express their thanks to Professor A. M. Prokhorov for his useful discussions of the results of this work." Orig. art. has: 1 figure and 4 formulas.

ASSOCIATION: Nauchno-issledovatel'skiy institut yadernoy fiziki MGU (Scientific Research Institute of Nuclear Physics MGU)

SUBMITTED: 13Sep63 DATE ACQ: 03Mar64 ENCL: 01

SUB CODE: PH NO REF SOV: 001 OTHER: 004

Card 2/3

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0

ACCESSION NR: AP4012567 S/0056/64/046/001/0386/0389

AUTHORS: Kaminskiy, A. A.; Korniyenko, L. S.; Makarenko, L. V.; Prokhorov, A. M.; Fursikov, M. M.

TITLE: Investigation of stimulated emission of Nd^{3+} in calcium fluorite at room temperature

SOURCE: Zhurnal eksper. i teoret. fiz., v. 46, no. 1, 1964, 386-389

TOPIC TAGS: stimulated emission, molecular generator, maser, calcium fluorite, neodymium impurity, neodymium doping, emission wavelength, emission time dependence, radiation structure, fine structure component.

ABSTRACT: The only fluorite doped with Nd^{3+} previously found to exhibit stimulated emission at room temperature was SrF_2 (L. F. Johnson, J. Appl. Phys., v. 34, 897, 1963). The authors report tests of

Card 1/3

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0

ACCESSION NR: AP4012567

crystals grown from the melt in a fluoriding atmosphere by lowering the crucible. Emission was observed in crystals with neodymium oxide concentrations 0.3 and 1.5%, the approximate wavelength being 1.047 micron. The system was excited by absorption of light from a flash system at 14,000 cm^{-1} above ground level. Emission corresponded to the $^4F_{3/2} \rightarrow {}^4I_{11/2}$ transition. The illuminating system consisted of an elliptical system with the crystal in one focus and the flash lamp (80-mm glow column) in the other. The time dependence of the radiation was determined with a photomultiplier and oscilloscope. The structure of the radiation was determined with a spectrograph having a 600 line/mm grating. For the crystal with 0.3% neodymium oxide the emission line width was approximately 3 Å (4 fine structure components), increasing to 5 Å (12 components) for the 1.5% crystal. "The authors are grateful to V. V. Osiko and Yu. K. Voronko for supplying the fluorite crystals and for fruitful discussions." Orig. art. has: 2 figures.

Card 2/3

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0

ACCESSION NR: AP4012567

ASSOCIATION: Institut yadernoy fiziki Moskovskogo gosudarstvennogo universiteta (Nuclear Physics Institute, Moscow State University)

SUBMITTED: 28Oct63 DATE ACQ: 26Feb64 ENCL: 00

SUB CODE: PH NO REF SOV: 001 OTHER: 001

Card 3/3

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0

L 20101-65 EWA(k)/FSD/EWG(r)/EWT(1)/EWT(m)/EEC(k)-2/EEC(t)/T/EWP(t)/
EEC(b)-2/EWP(k)/EWP(b)/EWA(m)-2/EWA(h) Pm-4/Pn-4/Po-4/Pf-4/Peb/Pi-4/Pl-4
SCTB/IJP(c) WG/JD/JG/GG

ACCESSION NR: AP5014193 UR/0386/65/001/002/0003/0007

AUTHOR: Vorob'ko, Yu. K.; Kaminskiy, A. A.; Korniyenko, L. S.; Osiko, V. V.; Prokhorov, A. M.; Udovenchik, V. T. 61 63 B

TITLE: Investigation of the stimulated emission in $CaF_2:Nd^{3+}$ crystals (type II) at room temperature 21

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki. Pis'ma v radaktsiyu. Prilozheniye, v. 1, no. 2, 1965, 3-7, and insert A

TOPIC TAGS: neodymium 71, calcium compound, stimulated emission, paramagnetic laser, room temperature laser 25

ABSTRACT: The present work, a continuation of earlier research (ZhETF, 46, 1964, 386) in which the authors obtained stimulated emission at ~1.047 μ in $CaF_2:Nd^{3+}$ (type I) crystals at 300K, gives preliminary results for laser action at ~1.0885 μ in $CaF_2:Nd^{3+}$ (type II) crystals at 300K. Type II crystals, unlike type I crystals, contain oxygen ions in the structure of their neodymium optical centers. The working crystals, which had 0.2—0.5% Nd^{3+} concentrations, were in the form of cylindrical rods having polished ends with an accuracy of ~15". The diameter and length of the rods were ~6.0 mm and 75 mm, respectively. The optical resonator consisted of externally

Card 1/2

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0

L 58467-65
ACCESSION NR: AP5014193

mounted confocal dielectric mirrors (radius of curvature, 500 mm; diameter, 40 mm; transmittivity, ~2% at 1.06 μ). An IFP-800 xenon lamp was used for pumping. Laser action resulted from the $^4F_{3/2} \rightarrow {}^4I_{11/2}$ transition. The lifetime of the excited $^4F_{3/2}$ state at 300K was measured (by means of a taumeter developed for this purpose) as ~1.25 μsec. At 300K, the type II laser operates at a lower frequency (~1.0885 μ) than any other known neodymium laser. Orig. art. has: 1 table and 3 figures. [YK]

ASSOCIATION: Institut yadernoy fiziki Moskovskogo Gosudarstvennogo universiteta (Institute of Nuclear Physics, Moscow State University); Fizicheskiy institut Akademii nauk SSSR (Physics Institute, Academy of Sciences SSSR)

SUBMITTED: 03Feb65 ENCL: 00 SUB CODE: EC, SS

NO REF SOV: 002 OTHER: 008 ATD PRESS: 4015

Card 2/2

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0

L 33254-65 EWG(j)/EWA(k)/EWD/EWT(1)/EEC(k)-2/T/EEC(t)/EEC(b)-2/EWP(k)/EWA(m)-2/EWA(h) Pn-4/Po-4/Pf-4/Peb/Pi-4/Pl-4 IJP(c) WG

ACCESSION NR: AP5007550 S/0368/65/002/001/0087/0089

56
B

AUTHOR: Kaminskiy, A. A.; Korniyenko, L. S.

25

TITLE: A method of determining the light efficiency of laser pumping systems

SOURCE: Zhurnal prikladnoy spektroskopii, v. 2, no. 1, 1965, 87-89

TOPIC TAGS: laser, neodymium doped tungstate, neodymium doped fluorite, laser pump reflector, laser pumping, solid state laser, laser system

ABSTRACT: An experimental method for studying the radiation field distribution inside cylindrical reflectors with elliptical cross sections and for determining the effectiveness of pumping sources is proposed. Five different reflectors are investigated, and data for three of these are tabulated. Diagrams show the cross sections of the three reflectors and the field distribution inside them. Particular attention is given to a study of the effect of reflection from the end walls of the reflectors on the field distribution. Analysis of field distribution curves shows that if the ratio $2b/L > 0.7-0.8$ the effectiveness of a reflector decreases even when there is minimum eccentricity. Experiments were also conducted with neodymium-doped tungstate and fluorite rods inside the reflector. A

Card 1/2

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0

L 33254-65

ACCESSION NR: AP5007550

O

reduction in threshold energy for these correlated well with the increased effectiveness of the reflectors as determined by the above method. Orig. art. has: 1 table and 2 figures. [YK]

ASSOCIATION: none

SUBMITTED: 22Jun64 ENCL: 00 SUB CODE: EC

NO REF SOV: 002 OTHER: 001 ATD PRESS: 3207

Card 2/2

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0

L 42951-65 EWA(k)/FBD/EWO(r)/EWT(1)/EEC(k)-2/EEC(t)/T/EEC(b)-2/EWP(k)/
EWA(m)-2/EWA(h) Pf-4/Pi-4/Pl-4/Pm-4/Pn-4/Po-4/Peb IJP(c) WG

ACCESSION NR: AP5010042 UR/0368/65/002/002/0138/0141

AUTHOR: Kaminskiy, A. A.; Korniyenko, L. S.; Litvak, D. M.; Osiko, V. A.; Prokhorov, A. M.

TITLE: A $CaF_2:Dy^{2+}$ CW laser pumped by a point-source light

SOURCE: Zhurnal prikladnoy spektroskopii, v. 2, no. 2, 1965, 138-141

TOPIC TAGS: paramagnetic laser, dysprosium doped laser, solid laser, point source pumping, laser pumping, CW laser

ABSTRACT: The design and certain characteristics of a CW $CaF_2:Dy^{2+}$ laser pumped by a point-source are described. A superhigh-pressure continuous xenon lamp, the DKSSh-1000, placed in an OKL-3a standard cine projection illuminator, was used as the point source of light. The block diagram of the laser is shown in Fig. 1 of the Enclosure. The xenon lamp was supplied by a PN-145 16.2-kw dc generator. The condenser system with the active medium (Dy^{2+}) was placed in a glass Dewar flask located at the second focus of an elliptic mirror. The image of the illuminating lamp was projected at the leading edge of the condenser. The condenser was prepared from natural fluorite whose edges were polished and parallel within at least 15". The resonator cavity consisted of silver mirrors, one of which had a

Card 1/4

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0

L 42951-65

ACCESSION NR: AP5010042

transmissivity of approximately 5%. To reduce scattering, all the condenser sides were silver coated. Stimulated emission of Dy^{2+} in CaF_2 was observed at 23,590 ± 10 and was due to the $^5I_7 \rightarrow {}^5I_8$ transition. The lifetime of the excited $^5I_7$ level at 300K was ~ 120 μsec and at the liquid nitrogen temperature, 14 msec. The beam divergence was approximately 5'. The proposed system utilizes available superbright point sources of light and simplifies the problem of eliminating the unnecessary portion of radiation from the excitation spectrum by means of standard plane filters. To improve the transmittance of the point source, the standard elliptical aluminum-coated mirror can be replaced by a mirror with an interference coating. This will increase the efficiency of the entire system by 30%. The use of mirrors with diameters up to 450 mm will further increase efficiency by 10—15%. To reduce the excitation threshold, the crystal ends should be terminated with multilayer dielectric mirrors and the condenser should be made of an optically homogeneous material with a large refractive index. The design of the pumping system and the characteristics of the pump lamp are such as to increase the volume of active material several-fold, which will result in an increased output. The system can be used readily for the excitation of lasers operating on other active materials. Orig. art. has: 2 figures. [YK]

ASSOCIATION: none

Card 2/4

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0

L 42951-65

ACCESSION NR: AP5010042

SUBMITTED: 03Sep64 ENCL: 01 SUB CODE: EC

NO REF SOV: 000 OTHER: 007 ATD PRESS: 3236

Card 3/4

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0

KAMINSKIY, A.A.; KORNIYENKO, L.S.; LITVAK, D.M.

Excitability of a continuous laser. Zhur. prikl. spekt. 3 no. 2:114-122 Ag '65. (MIRA 18:12)

1. Submitted June 9, 1964.

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0

L 34491-65 EWT(1)/EWT(m)/EEC(t)/T/EWP(t)/EWP(b)/EWA(c) Peb IJP(c) JD/JG

ACCESSION NR: AP5005311 S/0181/65/007/002/0625/0628

33
27
B

AUTHOR: Kask, N. Ye.; Korniyenko, L. S.

TITLE: On a new electron paramagnetic spectrum of neodymium in single crystals of CaF_2

SOURCE: Fizika tverdogo tela, v. 7, no. 2, 1965, 625-628

TOPIC TAGS: neodymium, fluorite, EPR, spin Hamiltonian, spin lattice relaxation, relaxation time

ABSTRACT: The single-crystal fluorite was grown from a melt by the method of lowering the crucible. Two types of crystals were investigated, one grown in a fluoriding atmosphere at normal pressure, permitting the presence of oxygen, and the other obtained in a fluorine atmosphere at high pressure, when it can be assumed that no oxygen is present. The measurements were made at liquid-helium temperature and at 14.4, 14.7, and 38.7 Gcs, mostly on the sample of the second type, in which spectra of tetragonal and rhombic symmetry were observed. In crystals of the first type, which were investigated only at 14.5 Gcs, only one

Card 1/3

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0

L 34491-65

ACCESSION NR: AP5005311

6

new type of spectrum was observed. The observed spectrum consists of three lines, disregarding the hyperfine components corresponding to the three different tetragonal axes, and belongs to the neodymium ion in a field of tetragonal symmetry. The line is symmetrical and its half-width at parallel orientation of the sample is 20 ± 1 oe. The transition takes place between levels with initial splitting, as is evidenced by the absence of resonance at 3-cm frequencies. The largest spectrum intensity was observed when the microwave field was parallel to the crystal axis. The constants of the spin Hamiltonian were measured and the temperature dependence of the spin-lattice relaxation time was determined. The values obtained for the relaxation time at 4.2K were 0.3 and 4 msec at 14.5 and 38.7 Gcs, respectively, showing a near-quadratic dependence on the frequency. "The authors thank A. M. Prokhorov for interest in the work and for useful discussions. The authors also thank V. V. Osiko, Yu. K. Voron'ko, and M. M. Fursikov for supplying the crystals and for fruitful discussion, and A. O. Rybaltovskiy for participating in the experiments." Orig. art. has: 1 figure and 3 formulas.

[02]

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova (Moscow State University)

Card 2/3

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0

L 34491-65

ACCESSION NR: AP5005311

SUBMITTED: 08Aug64 ENCL: 00 SUB CODE: SS,NP

NO REF SOV: 003 OTHER: 007 ATD PRESS: 3213

Card 3/3

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0

L 31320-65 EWP(e)/EWT(m)/EWP(t)/EWP(b) IJP(c) AD/AW/AO/AM
ACCESSION NR: AP5005327 S/0181/65/007/002/0663/0665

26
25
15 B

AUTHOR: Kask, N. Ye.; Korniyenko, L. S.; Rybaltovskiy, A. O.

TITLE: Electron paramagnetic resonance of irradiated monocrystals of fluorite containing neodymium impurity

SOURCE: Fizika tverdogo tela, v. 7, no. 2, 1965, 663-665

TOPIC TAGS: electron paramagnetic resonance, fluorite, neodymium impurity, doped fluorite, radiation defect, gamma bombardment

ABSTRACT: Electron paramagnetic resonance was investigated in fluorite monocrystals containing isomorphous Nd^{3+} impurity ions bombarded with 1.2-Mev gamma rays. The dose was sufficiently large (10^7 r) to make it possible to assume that additional exposure to irradiation would cause no considerable changes in the effects under investigation. The neodymium concentration of the samples was 0.02, 0.07, and 0.4 percent. The EPR of the irradiated samples was conducted in the SHF range (λ = 2—3 cm). Although the absorption spectra of the irradiated samples indicated the appearance of Nd^{2+} ions, no EPR spectra attributable to this impurity were observed. It is probable that the lower state of Nd^{2+} is a singlet. The EPR spectra of ions in a tetragonal field of symmetry did not change with irradiation.

Card 1/3

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0

L 31320-65
ACCESSION NR: AP5005327

Upon bombardment of samples with an Nd concentration of 0.07 percent, the intensity of the EPR spectra of ions in the other field of symmetry found in nonirradiated samples (orthorhombic field of symmetry) decreased by one-half. In samples with an Nd concentration of 0.4 percent intensity decreased by a factor of 1.3. A new EPR spectrum of Nd^{3+} was also observed. When the field was applied along the <001> axis of the unit cube (cell) consisting of the eight ions F^-, the spectrum consisted of two lines with g-factors of 1.88 and 3.75. The half-width of one of the lines was 80 Oe. The two lines split into eight and four components, respectively, when the direction of the magnetic field was changed. The angular dependence of the 12 components indicates that they are formed by ions in a field of the same symmetry although each component has different directions of three mutually perpendicular axes. The intensity of the new spectra was directly proportional to the weakening of the intensity of the EPR spectrum of the orthorhombic field symmetry. When the samples were heated to temperatures of 150—200C, the EPR spectra caused by irradiation disappeared and the intensity of the orthorhombic spectra was restored. It was concluded that the new spectrum arose as a result of the effect of irradiation on the Nd^{3+} ions which produce the orthorhombic EPR spectrum. Since no changes were observed in the tetragonal spectra and no Nd^{3+} ions were found in the cubic field of symmetry, it was assumed that the ions in the rhombohedral field of symmetry prior to bombardment are responsible for the appearance of Nd^{2+} ions. [CS]

Card 2/3

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0

L 31320-65
ACCESSION NR: AP5005327

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova (Moscow State University)

SUBMITTED: 08Aug64 ENCL: 00 SUB CODE: SS, NP

NO REF SOV: 001 OTHER: 003 ATD PRESS: 3198

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0

L 35506-65 EEC(b)-2/EWG(j)/EEC(k)-2/EWA(h)/EWA(k)/EWP(k)/EWT(1)/EWT(m)/EEC(t)/FBD/EWP(b)/T/EWA(m)-2/EWP(t) Pz-4/Pl-4/Pl-4/Pn-4/Po-4/Peb IJP(c) WG/JD/JG

ACCESSION NR: AP5006495 S/0056/65/048/002/0476/0482

AUTHOR: Kaminskiy, A. A.; Korniyenko, L. S.; Prokhorov, A. M.

67
64
B

TITLE: A spectral study of stimulated emission from Nd^{3+} in CaF_2

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 48, no. 2, 1965, 476-482

TOPIC TAGS: stimulated emission, neodymium, fluorite, electron paramagnetic resonance, crystal field symmetry, laser, neodymium laser

ABSTRACT: Following earlier investigations of the induced emission from the

$$^4F_{3/2} \rightarrow {}^4I_{11/2}$$

transition of Nd^{3+} in CaF_2 at 77K (L. F. Johnson, J. Appl. Phys. v. 38, 756, 1962) and at room temperature (ZhETF v. 46, 386, 1964), the authors report experimental results of a spectral study of this stimulated emission at temperatures from 300 to 15K. Emission was investigated in crystals with Nd^{3+} ion concentrations from 0.02 to 0.7%, grown from a melt in a fluorine atmosphere by the method of lowering the crucible. Whereas only one line was observed in earlier research, five new lines were ob-

Card 1/3

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0

L 35506-65

ACCESSION NR: AP5006495

2

served below 100K in the present investigation. The exciting light was supplied by a xenon flash lamp, the ultraviolet radiation from which was cut off with a yellow filter. The spectrum was recorded with a spectrograph with a grating of 1200 lines/mm, the long-range band of which extended to 1.07 μ. The wavelength could be measured with accuracy ± 0.1 Å. The stimulated emission was detected with a photomultiplier with oxygen-cesium photocathode. Crystals 15 mm long and 6.5 mm in diameter with polished cylindrical side surfaces were used in the investigations. The cavity consisted of a crystal coated with 13-layer dielectric mirrors. Only one line, 10461 Å, was observed at 300K for all the crystals, except those with an Nd^{3+} concentration of approximately 0.02%. The additional lines had wavelengths of 10448.2, 10466.6, 10480.8, 10507.9, and 10650.1 Å (there were slight variations in these values from crystal to crystal). The line widths ranged from 0.1 to 0.9 cm^{-1}, and increased by approximately 2.5 times as the concentration increased from 0.07 to 0.7%. The results were compared with data on the EPR of the Nd^{3+} ion, and it is shown from the EPR data that as the Nd^{3+} concentration is increased, a rhombic symmetry becomes superimposed on the original tetragonal symmetry of the environment of the ion. Some of the additional lines observed in the crystal can be attributed to the influence of this symmetry. It is also shown that emission from the upper and lower levels is governed by the rhombic and tetragonal symmetries, respectively. "The authors thank L. V. Makarenko for great help with the experiments and V. V. Osiko for fruitful discussions and for providing the crystals." Orig. art. has: 6 figures and 1 table. [02]

Card 2/3

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0

L 35506-65

ACCESSION NR: AP5006495

ASSOCIATION: Institut yadernoy fiziki Moskovskogo gosudarstvennogo universiteta (Institute of Nuclear Physics of the Moscow State University)

SUBMITTED: 03Sep64 ENCL: 00 SUB CODE: SS, OP

NO REF SOV: 003 OTHER: 001 ATD PRESS: 3215

Card 3/3

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0

L 48094-65 EWA(k)/FBD/EWG(r)/EWT(1)/EEC(k)-2/EEC(t)/T/EEC(b)-2/EWP(k)/EWA(m)-2/EWA(h)
Pm-4/Pn-4/Po-4/Pf-4/Pob/Pi-4/Pl-4 SCTB/IJP(c) WG

ACCESSION NR: AP5013884 UR/0056/65/048/005/1262/1266

AUTHOR: Kaminskiy, A. A.; Korniyenko, L. S.; Prokhorov, A. M.

65
64
B

TITLE: Lifetime of the $^4F_{3/2}$ excited state of a Nd^{3+} ion in CaF_2 and $CaWO_4$

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 48, no. 5, 1965, 1262-1266

TOPIC TAGS: ion lifetime, excited ion, trivalent neodymium, taumeter, radiationless transition, CaF_2, $CaWO_4$, paramagnetic laser

ABSTRACT: An experimental study of the lifetime of the excited $^4F_{3/2}$ state of a Nd^{3+} ion in CaF_2 and $CaWO_4$ crystals was made in the 300—4.2K temperature range and for various concentrations of Nd^{3+} ranging from several thousandths percent to a few percent. In view of the fact that CaF_2 and $CaWO_4$ crystals are used for lasers operating at room temperature, analysis was made of the effect of nonradiative transitions on the reduction of lifetime of the excited $^4F_{3/2}$ level. Experiments were carried out by means of a taumeter (fully described in the article) in which rapid changing of crystals and control of temperature are possible. The experimental results, shown in Figs. 1 and 2 of the Enclosure, indicate the following: 1) an increase in the concentration of Nd^{3+} ions in CaF_2 causes a reduction in the

Card 1/4

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0

L 48094-65

ACCESSION NR: AP5013884

... for both types of spectra, the tetragonal and ... in ex-

direction of ... crystals at room temperatures are of importance ... transitions. For CaF_2 crystals noticeable reduction in the lifetime of spontaneous transitions. For $CaWO_4$ crystals at all temperatures ... nitrogen and lower temperatures and for $CaWO_4$ crystals at all temperatures ... of the excited $^4F_{3/2}$ state is determined by the spontaneous ... [YK]

... universiteta

... Vadernoy fiziki ... Institute, Moscow State ...

... PRESS: 4002

Card 2/4

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0

L 48094-65

ACCESSION NR: AP5013884

ENCLOSURE: 01

0

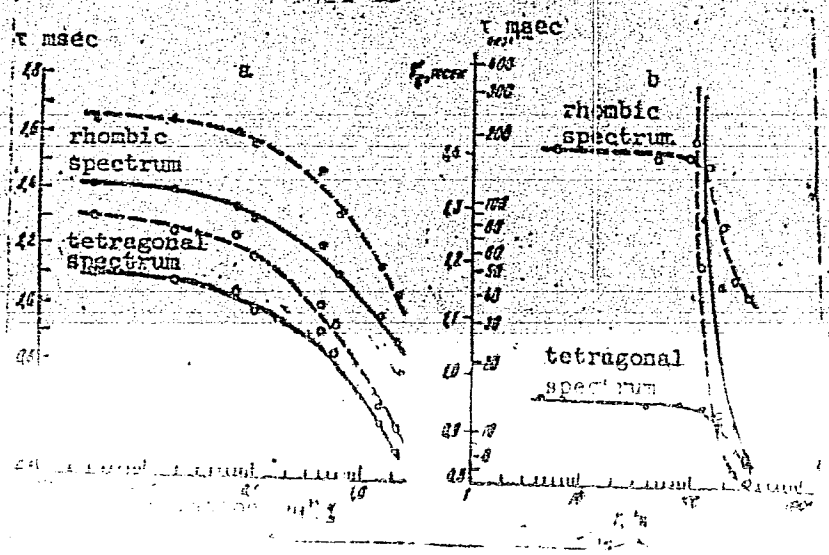


Fig. 1. Lifetime of excited $^4F_{3/2}$ state of Nd^{3+} ion in CaF_2:

a - as a function of concentration of active centers (continuous line corresponds to 300 K, dotted line - 77 and 4.2 K); b - as a function [illegible] at Nd^{3+} concentration [illegible] ~0.4%.

Card 3/4

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0

L 45094-65

ACCESSION NR: AP5013884

ENCLOSURE: 02

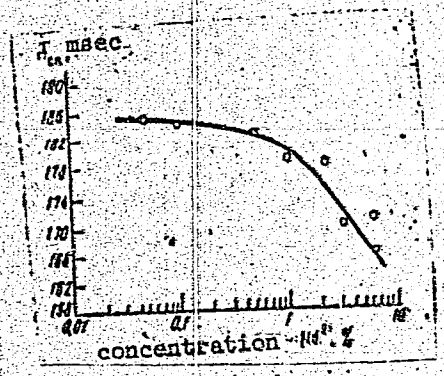


Fig. 2. Lifetime of excited $^4F_{3/2}$ state of Nd^{3+} ion in $CaWO_4$ as a function of temperature.

Card 4/4

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0

L 62763-65 EWA(k)/FBD/EWG(r)/EWT(1)/EWP(e)/EWT(m)/EEC(k)-2/EWP(i)/T/EWP(t)/EEC(b)-2/
EWP(k)/EWP(b)/EWA(m)-2/EWA(h)/EWS(m) Pm-4/Pn-4/Po-4/Pq-4/Pf-4/Peb/Pi-4/Pl-4
SCTB/IJP(c) WG/RDW/JD/JAI/WH

ACCESSION NR: AP5019213 UR/0056/65/049/001/0031/0035

81
79
B

AUTHOR: Kaminskiy, A. A.; Korniyenko, L. S.; Maksimova, G. V.; Osiko, V. V.; Prokhorov, A. M.; Shipulo, G. P.

TITLE: CW $CaWO_4:ND^{3+}$ laser operating at room temperature

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 49, no. 1, 1965, 31-35

TOPIC TAGS: CW laser, neodymium laser, glass laser, room temperature laser, water cooled laser

ABSTRACT: The design and fundamental characteristics of a CW neodymium-doped $CaWO_4$ water-cooled laser, operating at room temperature, are described in detail. Single crystals were grown by the Czochralski method. The $CaWO_4$ mixture was prepared by sedimentation. The starting materials were ammonium paratungstate and calcium chloride, specially refined for this purpose. The neodymium was introduced in the form of a binary salt $NaNd(WO_4)_2$. Na_2WO_4 was introduced into the melt in a concentration seven times greater than that of Nd. Growth was conducted on seed crystals oriented according to both axis c and axis a at a rate of 7—12 mm/hr for a seed rotation of 50 rpm. The neodymium concentration was varied from 0.1 to 5 percent.

Card 1/3

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0

L 62763-65

ACCESSION NR: AP5019213

Reduction of the growth rate from 12 to 7 mm/hr led to significant improvement in the optical quality of the crystal. The infrared luminescence of the neodymium ions due to transitions from the $^4F_{3/2}$ level to the different levels of the ^4I multiplet (the most intense luminescence being at 1.06 μ, which corresponds to the transition $^4F_{3/2} \rightarrow {}^4I_{11/2}$) and its absorption spectrum were considered. A crystal 5 mm in diameter and 42 mm long with an Nd^{3+} concentration of about 3.0 percent, was selected for the laser. The lifetime of the excited state $^4F_{3/2}$ of this crystal at room temperature and lower was 172 ±2 μsec. A xenon lamp was placed at one focal point of an elliptical reflector, while the working crystal (ZhS-17 glass) was placed at the other. The optical resonator consisted of multilayer dielectric mirrors placed at the confocal ends of the crystal. The laser operated at λ = 10,584 Å with a line width of approximately 1 Å. The laser action was sustained at a pumping power of 2.6 kw, and a 40% increase in the threshold power resulted in a laser output of several tens of mw with a 1° beam divergence. The threshold of the working crystal pulse excited by a 2.6-kw pumping source was 2 j. Basic difficulties in constructing a $CaWO_4:Nd^{3+}$ laser are shown to be the selection of suitable transmission bands and the selection of the crystal diameter for a given Nd^{3+} concentration. Orig. art. has: 5 figures. [YK]

Card 2/3

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0

L 62763-65

ACCESSION NR: AP5019213

2

ASSOCIATION: Institut yadernoy fiziki Moskovskogo gosudarstvennogo universiteta (Institute of Nuclear Physics, Moscow State University); Fizicheskiy institut im. P. N. Lebedeva Akademii nauk SSSR (Physics Institute, Academy of Sciences, SSSR)

SUBMITTED: 25Jan65 ENCL: 00 SUB CODE: EC

NO REF SOV: 004 OTHER: 007 ATD PRESS: 4056

Card 3/3

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0

EWT(1)/EWT(m)/EEC(t)/FBD/EWP(b)/T/EWA(m)-2/EWP(t) Pf-4/Pi-4/Pl-4/Pm-4/Pn-4/Po-4/Pr-4/Ps-4/Pu-4/Peb SOTB/IJP(c) WG/JD/JW/JG

ACCESSION NR: AP5011526 UR/0020/65/161/005/1063/1064

AUTHOR: Kaminskiy, A. A.; Korniyenko, L. S.; Prokhorov, A. M. (Corresponding Member AN SSSR)

TITLE: Dysprosium-doped fluoride CW laser pumped by solar radiation

SOURCE: AN SSSR. Doklady, v. 161, no. 5, 1965, 1063-1064

TOPIC TAGS: solid state laser, paramagnetic laser, dysprosium doped fluoride laser, CW laser, solar laser

ABSTRACT: The first Soviet dysprosium-doped fluoride CW laser pumped by solar radiation is discussed. Unlike the first $CaF_2 : Dy^{2+}$ laser developed by Z. J. Kiss et al (J. Appl. Phys. Let., 2, no. 5, 1963, 93), which operated at the liquid neon temperature (27K), the present laser operates at the temperature of liquid nitrogen (77K). The experiments with the new laser were conducted at noon, under a cloudless sky in Moscow during the period 20—30 August 1964. The generation, which occurred in the 4f—5d absorption band from 25,000 to 10,000 cm^{-1}, corresponded to the $^5I_7 \rightarrow {}^5I_8$ transition which terminated at a level approximately 35 cm^{-1} above ground level. The solar rad-

Card 1/2

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0

L 49282-65

ACCESSION NR: AP5011526

3

iation was focused by a standard glass, aluminum-coated mirror ~450 mm in diameter to a spot ~10 mm in diameter. A more efficient transmission of solar radiation into the crystal was achieved by a conical condenser made of optically uniform K8 glass or fluoride to which the active crystal (26 x 3 x 4 mm) was attached. The ends of the resonator were fitted with two parallel (not less than 15") silver mirrors, one mirror being ~3% reflective. The condenser and crystal were kept in a cryostat with pure liquid nitrogen. Since the effective area of the mirror was 1500 cm² the laser could be operated in a near-threshold state. Laser action was interrupted when the mirror was partially darkened. The preliminary laboratory data show that for a laser pumped by a DKSSh-type xenon lamp, laser wavelength was 2.3590 ± 10 A. The power developed by the solar laser was estimated at several microwatts. Orig. art. has: 2 figures. [YK]

ASSOCIATION: Institut yadernoy fiziki Moskovskogo gosudarstvennogo universiteta im. M. V. Lomonosova (Nuclear Physics Institute of the Moscow State University); Fizicheskiy institut im. P. N. Lebedeva Akademii nauk SSSR (Physics Institute, Academy of Sciences, SSSR)

SUBMITTED: 04Sep64 ENCL: 00 SUB CODE: EC

NO REF SOV: 000 OTHER: 002 ATD PRESS: 3245

Card 2/2

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0

L 27649-66 EEC(k)-2/EWA(h)/EWP(k)/EWT(1)/EWT(m)/FBD/T IJP(c) WH/WG

ACC NR AP6018495 SOURCE CODE: UR/0368/65/003/002/0114/0122

AUTHOR: Kaminskiy, A. A.; Korniyenko, L. S.; Litvak, D. M.

ORG: none

64
60
B

TITLE: Possibility of exciting a continuous-action optical laser 25

SOURCE: Zhurnal prikladnoy spektroskopii, v. 3, no. 2, 1965, 114-122

TOPIC TAGS: laser, mercury lamp, ruby laser, light excitation, xenon lamp motion picture projector

ABSTRACT: The proper selection of sources of light excitation is important in the development of continuous-action optical lasers. In this connection the authors present formulas suitable for evaluating the excitation thresholds and give data on the spectral emission of Soviet-produced lasers. Further, experimentally obtained absolute figures on the power that can be obtained over different spectral intervals with the aid of the OKL-3a motion-picture projector are given. This projector is used since at present there are no selective emitters with sufficient power to excite lasers, and, hence, sources emitting over a broad spectral range have to be used. A comparison of the theoretical evaluations and experimental findings on measurements of the spectral distribution of emission shows that a mercury lamp may be recommended for

Card 1/2 UDC: 535.89

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0

L 27649-66

ACC NR: AP6018495

4

exciting ruby, while a xenon lamp may be recommended for exciting Nd^{3+}, U^{3+}, and Dy^{2+}. It is also expedient to use a tungsten lamp to excite Dy^{2+}. The authors thank A. K. Shevchenko for his valuable observations, A. S. Kovalev for his help in conducting the experiment, and L.D. Kolpakov for his preparation of the basic details of the experimental equipment. Orig. art. has: 2 figures, 25 formulas, and 3 tables. [JPRS]

SUB CODE: 20, 09 / SUBM DATE: 09Jun64 / ORIG REF: 003 / OTH REF: 012

Card 2/2 NV

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0

L 27447-66 EWT(1)/EWP(e)/EWT(m)/EWP(t)/EWP(b) IJP(c) JD/AW/JN/JG/GG/RH

ACC NR: AP5027399 SOURCE CODE: UR/0181/65/007/011/3234/3240

62
B

AUTHOR: Kask, N. Ye.; Korniyenko, L. S.; Rybaltovskiy, A. O.

ORG: Moscow State University im. M. V. Lomonosov (Moskovskiy gosudarstvennyy universitet)

TITLE: Rhombic EPR spectra of triply ionized dysprosium and neodymium ions in fluorite

SOURCE: Fizika tverdogo tela, v. 7, no. 11, 1965, 3234-3240

TOPIC TAGS: EPR, fluorite, crystal, EPR spectrum, dysprosium, neodymium, ion, gamma irradiation, crystal structure

ABSTRACT: The EPR spectra of Dy^{3+} and Nd^{3+} ions in CaF_2 crystals grown in the presence of oxygen were investigated. Rhombic spectra with one of the magnetic axes along the direction [110] and the other two in the plane (110) and displaced by different angles from the directions [001] and [$1\bar{1}0$] were observed for both ions. The exposure to gamma irradiation resulted in the appearance of a trigonal spectrum of Dy^{3+}, a spectrum of Dy^{2+} with initial splitting $\Delta = 0.26 \pm 0.03$ cm^{-1}, and a new rhombic spectrum of Nd^{3+}. Investigations were also made of the temperature dependence of the relaxation time of one of the rhombic spectra of the Nd^{3+} ion and of the Dy^{3+} ion. The experimental data obtained were used in an analysis of the possible crystal structure of the matrix near the paramagnetic ions in fluorite. Orig. art. has: 3 formulas, 3 figures, and 2 tables. [CS]

Card 1/2

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0

L 27447-66

ACC NR: AP5027399

SUB CODE: 20/ SUBM DATE: 13May65/ ORIG REF: 005/ OTH REF: 006/ ATD PRESS: 4159

Card 2/2

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0

KORNIYENKO, ~~Mitrofan Andreyevich~~; ANDREASOV, L.M., prof., otv.red.; BAZILYANSKAYA, I.L., red.; CHERNYSHENKO, Ya.T., tekhn.red.

[Manual of practical exercises in general chemistry] Rukovodstvo k prakticheskim zaniatiiam po obshchei khimii. Khar'kov, Izd-vo Khar'kovskogo univ., 1958. 329 p. (MIRA 12:2)
(Chemistry--Laboratory manuals)

APPROVED FOR RELEASE

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0

L 10448-66 EWT(d)/EEC(k)-2 RB/WS-2

ACC NR: AR5027561 SOURCE CODE: UR/0274/65/000/008/A028/A028

SOURCE: Ref. zh. Radiotekhnika i elektrosvyaz', Abs. 8A207

AUTHOR: Korniyenko, M. G.; Simakova, N. A.

TITLE: Correlation characteristics of the angle diversity in long distance tropospheric uhf propagation

CITED SOURCE: Tr. Sibirsk. fiz.-tekhn. in-ta pri Tomskom un-te, vyp. 45, 1964, 211-214

TOPIC TAGS: decimeter wave, tropospheric propagation, diversity reception

TRANSLATION: The variation of the crosscorrelation coefficient of angle-diversity received signals (R), for directional patterns which exceed the angle dimensions of the scattering volume, is considered; the effect of receiving-antenna directional-pattern width (α) and the antenna angle-of-arrival (β) diversity on the cross-correlation factor is considered. It is proven that the quantity R depends on the angle of intersection of receiving-antenna directional patterns. Results of an experimental study of the above relations obtained on a 250-km route, in the decimeter band, with the receiving-antenna directional-pattern diversity in a horizontal plane are reported. Curves of R vs. α and β are presented which show that, in the angle-diversity reception, the directional-pattern diversity should be equal to α, and that α should be $\leq 2.5°$.

Card 1/1

SUB CODE: 17

UDC: 621.396.235.2

KORNIYENKO, M.S.

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0

Subject : USSR/Electricity AID P - 711

Card 1/1 Pub. 29 - 4/26

Authors : Dzalayev, M. I., Eng. and Korniyenko, M. S., Mechanic

Title : Reconstruction of coal conveyor units

Periodical : Energetik, 9, 9-11, S 1954

Abstract : The author describes details of reconstruction of scraper conveyors at an electric power station which was expanded. 4 diagrams.

Institution : None

Submitted : No date

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0

KORNIYENKO, N.A.; MUKHADOV, G.M.

Combatting the tick Hyalomma with hexachloran dust. Izv.AN Turk.SSR no.2: 63-68 '51. (MLRA 6:8)

1. Turkmenskiy sel'skokhozyaystvennyy institut im. M.I.Kalinina.
(Hyalomma) (Benzene hexachlorine)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0

1. KORNIYENKO, N. I.

2. USSR (600)

4. Chemistry - Study and Teaching

7. Laboratory control work as a method of ascertaining the knowledge and practices in chemistry, Khim. v shkole, No. 6, 1952.

9. Monthly List of Russian Accessions, Library of Congress, February 1953. Unclassified.

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0

KORNIYENKO, N.I., inzhener.

Centralized electric block system. Zhel.dor.transp. 37 no.10: 60-65 O '55. (MLRA 9:1)

(Railroads--Signaling--Block system)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0

KORNIYENKO, N. I.

KORNIYENKO, N. I. --"Block Structures and the Standardization of Equipment for Electrical Centralization." Min Railways USSR. Moscow, 1956. (Dissertation for the Degree of Candidate in Technical Sciences.)

So.: Knizhnaya Litopis', No. 7, 1956.

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0

KORNIYENKO, N.I.

BORISOV, D.P., doktor tekhn.nauk, prof.; KORNIYENKO, N.I.; MUZALEVSKIY, N.D.; PUSHKAREV, B.N.; CHEKMENEV, N.M., inzh., red.; BOBROVA, Ye.N., tekhn.red.

[Electric block centralization] Blochnaia elektricheskaia tsentralizatsiia. Moskva, Gos. transp. zhel-dor. izd-vo, 1957. 108 p. (Moscow. Vsesoiuznyi nauchno-issledovatel'skii institut zheleznodorozhnogo transporta. Trudy, no.145). (MIRA 11:4)
(Railroads--Signaling--Block system)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0

KORNIYENKO, N.I., kand.tekhn.nauk

Unit-type electric interlocking equipped with small relays.
Zhel.dor.transp. 40 no.11:51-54 N '58. (MIRA 11:12)
(Railroads--Signaling--Interlocking systems)
(Electric relays)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0

BORISOV, D.P., doktor tekhn.nauk; KORNIYENKO, N.I., kand.tekhn.nauk

Use of programmed control for automatic traffic regulation. Vest. TSNII MPS 19 no.3:56-57 '60. (MIRA 13:10)
(Railroads--Automatic train control)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0

ZVEREV, G.M.; KORNIYENKO, L.S.; PROKHOROV, A.M.; AMIRNOV, A.I.

Electronic paramagnetic resonance and spin-lattice relaxation of an Er^{3+} ion in a CdF_2 single crystal. Fiz.tver.tela 4 no.2:392-395 F '62. (MIRA 15:2)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova.
(Cadmium fluoride crystals)
(Paramagnetic resonance and relaxation)
(Erbium)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0

ZVEREV, G.M.; KARLOV, N.V.; KORNIYENKO, L.S.; MANENKOV, A.A.; PROKHOROV, A.M.

Use of paramagnetic crystals in quantum electronics. Usp. fiz. nauk 77 no.1:61-108 My '62. (MIRA 15:6)
(Magnetic materials) (Quantum electronics)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0

KORNIYENKO, N.M., inzh.; MIROSHNICHENKO, Yu.M., inzh.

Automation of bituminous emulsion plants. Avt. dor. 26 no.6: 9-10 Je '63. (MIRA 16:8)

(Bitumen)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0

Kornienko, N. V. Dehydrating and desalting petroleum in Rumanian petroleum industries Moskva, 1947. 28 p. Biuro tekhniko-ekonomicheskoi informatsii TSIMT nefti. Insotrannaia neftianaia teknika. Dobycha

(51-26302) TP690.K67

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0

KORNIYENKO, N.Ye.

Glued sheet flooring. Rats. i izobr. predl. v stroi. no.96:18-19 '54. (MIRA 8:7)

1. Tekhnicheskoye upravleniye Ministerstva stroitel'stva SSSR. (Floors)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0

KORNIYENKO P. PA 17T17

USSR/Medicine - Blood Jul 1947
Medicine - Parasites

"Tests of the New Preparation LP_2 for Treatment of Blood-parasite Diseases," P. Korniyenko (Koneva), 4 pp

"Veterinariya" No 7

Synthetic serum was created at the Institute of Organic Chemistry, Academy of Sciences, by organic combinations with urea. LP_2 shows parasitropic qualities for treatment of muttalliosis in horses.

17T17

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0

AID P - 5304

Subject : USSR/Aeronautics - Model building

Card 1/1 Pub. 58 - 11/13

Author : Korniyenko, P., Sportsman 1/c, Champion at the Model-Building Competition of the Institutions of Higher Education in Aeronautics

Title : Building of rubberband-propelled models

Periodical : Kryl. rod., 10, 20-21, O 1956

Abstract : A technical description of the model produced by the author at the All-Union Competition of students of the institutions for higher education in aeronautics. 1 drawing.

Institution : None

Submitted : No date

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0

FEDORCHENKO, I.M.; KOROBKO, M.I.; PUGIN, V.S.; MARTYNYUK, G.F.; KORNIYENKO, P.A.; KISELEV, Yu.Ye.

Using ceramic metal filters for the purification of samples of flue gas from open-hearth furnaces. Porosh. met. 5 no.10: 100-106 O '65. (MIRA 18:11)

1. Institut problem materialovedeniya AN UkrSSR.

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0

ACC NR: AP6036907 (N) SOURCE CODE: UR/0226/66/000/011/0089/0092

AUTHOR: Korniyenko, P. A.; Kostornov, A. G.; Pugin, V. S.

ORG: Institute of Problems of Material Science, AN UkrSSR (Institut problem materialovedeniya AN UkrSSR)

TITLE: Method of manufacturing large porous wall pipes

SOURCE: Poroshkovaya metallurgiya, no. 11, 1966, 89-92

TOPIC TAGS: stainless steel, pipe, porosity, metal joining, powder metal sintering

ABSTRACT: A process for joining large porous stainless-steel pipes into longer sections and for joining Kh17N2 cast stainless-steel flanges and end plates to pipe ends has been developed. Extruded (100 x 90 mm) pipes 400—450 mm long are joined into sections up to 2 m long by sintering using cementing paste containing carbonyl nickel powder and glycerin. The sintering is done at 1000C for 1 hr. A section up to 2 m long has a filtering area about 0.628 m^2 which can be used for filtration of aggressive gas media. Sintered joints have a porous structure with pores smaller than in sintered pipes. The joints ensure satisfactory rigidity and strength of sintered parts. Orig. art. has: 3 figures.

SUB CODE: 13/ SUBM DATE: 21Mar66/ ORIG REF: 004/

Card 1/1

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0

KORNIYENKO, P.M.

KORNIYENKO,P.M.; GLOZMAN,I.A.; ANDRYUKHI,I.Ya.; ZHARKOV,I.N.

Small-size clay slabs for wall facings. Rats. i izobr.predl. v stroi. no.108:24-25 '55. (MLRA 8:10)

(Walls)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0"

"APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0

FEDOROV, N.A.; DMITRIYEV, A.V.; LUK'YANOV, S.V.; KORNIYENKO, P.P.

Studying the process of the hydraulic fracturing of coal seams. Nauch. trudy VNII Podzemgaza no.6:66-78 '62. (MIRA 15:11)

1. Laboratoriya gazifikatsii kamennykh ugley Vsesoyuznogo nauchno-issledovatel'skogo instituta podzemnoy gazifikatsii ugley.

(Coal gasification, Underground)
(Hydraulic mining)

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R000824720017-0"