

Influence of glass-structure ...

30608
S/058/61/000/008/009/044
A058/A101

under the influence of visible light. The dependence of the total amount of thermofluorescence light on the concentration of Ce was determined, as well as the dependence of the luminescence brightness on the wavelength of the visible radiation. A mechanism is proposed that demonstrates the presence in Ce glasses of two luminescence processes and a screening effect of Ce with respect to gamma rays. There are 16 references. X

M. Veynberg

[Abstracter's note: Complete translation]

Card 2/2

KARAPETYAN, G.O.; YUDIN, D.M.

Using the electron paramagnetic resonance method for studying the effect of gamma-radiation on phosphate glass. Fiz. tver. tela 3 no.9:2827-2834 S '61. (MIRA 14:9)

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

(Paramagnetic resonance and relaxation)
(Gamma rays) (Glass)

22191

24.3500 1160
15 2120 also 1035,
1138

S/048/61/025/004/040/048
B117/B209

AUTHOR: Karapetyan, G. O.

TITLE: Luminescence of copper-activated glass

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya,
v. 25, no. 4, 1961, 539-541

TEXT: The present paper has been read at the 9th Conference on Luminescence (Crystal Phosphors). The author has studied the properties of copper-activated glass as related to its composition, conditions of preparation, copper concentration, and the action of ionizing radiations. The examination of activated phosphate-, borate-, and silicate glass of plain composition has proved that in all types of glass, copper may be contained in atomic, mono-, and bivalent phase. The absorption band with its maximum within $800 \div 880 \text{ m}\mu$ could be related to the presence of bivalent copper by application of the paramagnetic resonance method. The passage of copper to the monovalent phase under the action of reducing agents leads to an attenuation and extinction of this band. At the same time, luminescence arises and is intensified under the action of ultraviolet rays. X

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Luminescence of copper-activated glass

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An absorption maximum in the region of 250 μ is characteristic of the presence of monovalent copper in glass. This maximum comes into being during the reduction of copper through carbon or ammonium fluoride. A further reduction leads to atomic copper. This is indicated by the formation of colloidal particles giving the glass a red color. The position of the emission band maximum, when changing from phosphate to borate and silicate glass, is connected with a considerable intensification of the interaction of activator and medium. These results are in agreement with those obtained in earlier studies on glass containing cerium. An increased concentration of the principal oxides and of copper in glass promotes the passage of copper to the bivalent phase. The luminescence spectrum also depends to a considerable extent on the wavelength of the exciting radiation. Special analyses have shown that the luminescence spectrum of glass with Sn, but without Cu, differs from that of glass with Cu and Sn. An excitation of glass of the latter type in the range of 254 μ leads to an energy emission in the short-wave range with the maximum at 440 μ (blue luminescence), and an excitation in the range of 365 μ to an emission at 580 μ (yellow luminescence). In the above-mentioned spectral ranges, these glass types may be used

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as indicators. The absolute luminescence quantum yield depends on the composition of the glass, on the wavelength of the exciting light, and on the copper concentration. In some cases, the maximum yield attains 50%. When silicate glass with copper is excited by a radiation with $\lambda < 250 \text{ m}\mu$, fluorescence as well as afterglow can be observed. In glass containing copper, an intense luminescence may be caused not only by excitation through ultraviolet but also through ionizing radiation. Studies have shown that it is possible to produce glass screens with a luminescent layer of a thickness of about $100 \div 200 \mu$ by means of the diffusion method. In the discussion on the present paper, I. B. Keyrim-Markus pointed out that the author's data to some extent also agree with data of his own studies. He also added that, according to his data, the luminescence spectrum depends not only on the type of glass (silicate or phosphate) but also on its composition. Glasses with monovalent ions (K, Na) show luminescence in the blue range, glasses with bivalent ions (Ca, Sr, Mg, Zn, etc.) in the red range. This may probably be due to the Cu^+ ions in the neighborhood of the ions mentioned. Moreover, he points out that the intrinsic glow of glasses, which occurs at higher temperature, is quenched when copper is introduced. [Abstracter's note: Essentially

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Luminescence of copper-activated glass

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complete translation.] There are 2 figures and 9 references: 6 Soviet-bloc and 3 non-Soviet-bloc. The two references to English-language publications read as follows: E. W. Claffu, J. H. Shulman, J. Electrochem. Soc., v. 98, 403 (1951); W. Weyl, Coloured Glasses, Sheffield, Soc. Glasstechn., 1951. ✓

Card 4/4

BONCH-BRUYEVICH, A. M. VARGIN, V. V. IMAS, Ya. A. KARAPETYAN, G. O.
KARIS, Ya. E. TOLSTOY, M. N. and FEOFILOV, P. P.

"Luminescence and induced radiation of a glass activated by neodymium."

The report gives the absorption and luminescence spectra of glass containing 0.1--10% neodymium. Stimulated emission in the region of 1.06 μ , observed in specimens, was investigated at room and nitrogen temperatures.

Report presented at the 11th conference on Luminescence (Molecular luminescence and luminescence analysis) Minsk, 10-15 Sep 1962

S/181/62/004/010/002/063
B108/B186

AUTHORS: Karapetyan, G. O., and Yudin, D. M.

TITLE: e. p. r.-investigation of the action of ionizing radiation
on glasses of the system $\text{Na}_2\text{O} \cdot \text{B}_2\text{O}_3 \cdot \text{SiO}_2$

PERIODICAL: Fizika tverdogo tela, v. 4, no. 10, 1962, 2647-2655

TEXT: Glasses exposed to Co^{60} gamma radiation were investigated with the e. p. r. method. The irradiation gave rise to a coloration of the glasses, intensity and hue being dependent on the composition of the glass. The F centers arising in the glasses under consideration are due to four different structural lattices: SiO_2 , $\text{SiO}_2 \cdot 2\text{Na}_2\text{O}$, BO_3 , BO_4 . The optical spectra of additional absorption of the glasses had three bands with their peaks at 310, 440, and 620 m μ . Gamma radiation breaks covalent bonds in the glasses thus producing free electrons, and holes localized at the oxygen. The position of the electron trapping centers is known to be localized at the boron since hyperfine structure lines were observed associated with the interaction of an electron with
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e. p. r.-investigation of the action ... S/181/62/004/010/002/063
B108/B186

B¹⁰ and B¹¹ nuclei. It is concluded that the electrons are localized also at the silicon or at the lattice-forming atoms. There are 5 figures. ✓

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

SUBMITTED: April 6, 1962

Card 2/2

24.7500

15351
S/181/63/005/002/039/051
B102/B186

AUTHORS: Karapetyan, G. O., Tsekhomskiy, V. A., and Yudin, D. M.

TITLE: Investigation of the structure of semiconductor glasses based on iron oxides

PERIODICAL: Fizika tverdogo tela, v. 5, no. 2, 1963, 627 - 633

TEXT: The electrical, optical and paramagnetic properties of Fe_2O_3 containing glasses were studied in dependence on the composition and on the redox conditions of melting. A total of 15 different compositions were investigated, most of them contained SiO_2 and BaO or PbO. Electrical conductivity, the e.p.r. spectra and the spectra of optical absorption were measured. $\log \rho = f(1/T)$ were straight lines, almost equally ascending for all glasses; $\log \rho$ decreases with increasing Fe_2O_3 percentage. The increase in conductivity is accompanied by a slight reduction of activation energy. A comparison of glasses melted under different redox condition shows that increased reduction (increased content of carbon in the mass) raises the resistivity irrespective of raised Fe II content. The e.p.r. Card 1/2

Investigation of the ...

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B102/B186

spectra were measured in fields of up to 6 koe. Resonance lines were observed at g -factors of 4.3 and 2.0; their intensity depended on the composition. If the carbon content is increased the e.p.r. lines fade out due to $Fe^{3+} \rightarrow Fe^{2+}$ transition; the Fe^{2+} e.p.r. spectrum can be observed only at helium temperatures. The line with $g = 2.0$ vanishes first. On investigating the optical absorption it was found that both in the case of BaO and PbO content the blue transmissivity depends on the iron concentration. Conclusions: The high conductivity of the glasses investigated is due to the presence of Fe^{3+} ions ($3d^5$) in octahedral configuration (coordination 6). Introduction of Al into the mass or substitution of SiO_2 by B_2O_3 in BaO glass increases absorption and reduces conductivity. There are 5 figures and 1 table. ✓

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

SUBMITTED: September 26, 1962
Card 2/2

L 10179-63 EWT(1)/EWP(q)/EWT(m)/BDS/EEG(b)-2--
AFFTC/ASD/SSD--Pq-4--WH/IJP(G)
ACCESSION NR: AP3000588 S/0051/63/014/005/0700/0704

65

AUTHOR: Karapetyan, G. O.; Lunter, S. G.; Yudin, D. M.

TITLE: Luminescence of chromium-activated glasses [Report presented
12 September 1962 at the XI Soveshchaniye po lyuminestsentsii (11th Conference on
Luminescence) in Minsk]

SOURCE: Optika i spektroskopiya, v. 14, no. 5, 1963, 700-704

TOPIC TAGS: glasses, luminescence, chromium-activated glasses, phosphate
glass, silicate glass, borate glass, electron paramagnetic resonance

ABSTRACT: The luminescence and EPR spectra of chromium-activated phosphate,
silicate, borate and borosilicate glasses and the dependence of these spectra
on the composition, temperature, preparation conditions, and Cr concentration
of the glass have been studied. Luminescence spectra, recorded at 77K, had a
wide band with a peak at 830 millimicrons for phosphate and silicate glasses
and an additional narrow band with a peak at 690--700 millimicrons for borates
and borosilicates. Both peaks were also observed for sodium borosilicate glass
of the composition $xNa_2O \cdot 2CaO \cdot 2O_2 \cdot 3(100-x-y)SiO_2$ (where x

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ACCESSION NR: AP3000588

varies from 5 to 30% and y from 5 to 60%), with low intensity of the narrow band. The intensity of the narrow band dropped and finally vanished when silicon oxide content was increased, but increased with an increase in the alkali oxide and boron anhydride content. In experiments with potassium barium borate and sodium barium borate glasses prepared under reducing conditions, variations in Cr concentration of 0.05 to 1.5% brought only peak-intensity changes. The intensity of the narrow band relative to that of the wide band was higher in the potassium- than in the sodium-containing glasses. A decrease in Cr content decreased the intensity of the narrow band. Preparation of the glass under oxidizing conditions increased the intensity of the narrow band relative to the wide band. Potassium barium borate glass prepared under strongly oxidizing conditions with addition of Cr as K sub 2 CrO sub 4 rather than as Cr sub 2 O sub 3 revealed no luminescence spectra. Preparation of a 14.9% K sub 2 O, 28.2% BaO, 56.9% B sub 2 O sub 3 (mol%) glass at various temperatures (1100 to 1500C) showed that a temperature increase led to a decrease in the intensity of the narrow band. The EPR spectra of sodium borosilicate glasses with varying Cr concentration had a narrow asymmetric line with $g = 1.97$ and two wide lines with $g = 2$ and $g = 4$ to 6. The spectra of phosphate and silicate glasses had two wide lines. Potassium barium silicate glass prepared with Cr under strongly oxidizing conditions

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ACCESSION NR: AP3000588

showed an intense EPR signal with $g = 4.3$. Luminescence and EPR signals were not observed in sodium or potassium aluminosilicates prepared under reducing conditions at room or at liquid-nitrogen temperatures. An EPR signal with $g = 4$ to 6 was observed for glasses prepared without Cr, suggesting that the signal is due to the presence of an impurity (probably iron). On the basis of a comparison with data in the literature, the narrow band of luminescence with a peak at 690 millimicrons is attributed to Cr sup +3 and Cr sup +5 ion pairs; the 830-millimicron peak to Cr sup +3; and the narrow EPR signal with $g = 1.97$, to Cr sup +5. The temperature dependence of luminescence is also interpreted in reference to the literature. Orig. art. has: 5 figures.

ASSOCIATION: none

SUBMITTED: 22Sep62 DATE ACQ: 12Jun63 ENCL: 00

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

dj/ae
Card 3/3

KARAPETYAN, G. O.
AID Nr. 995-19 -22 June

LUMINESCENCE AND STIMULATED EMISSION OF NEODYMIUM-
ACTIVATED GLASS (USSR)

Feofilov, P. P., A. M. Bonch-Bruyevich, V. V. Vargin, Ya. A. Imas,
G. O. Karapetyan, Ya. Ye. Kriss, and M. N. Tolstoy. IN: Akademiya
nauk SSSR. Izvestiya. Seriya fizicheskaya, v. 27, no. 4, Apr 1963,
466-472. S/048/63/027/004/002/026

Studies of luminescence and induced emission of neodymium-doped glass have been carried out, and optimum glass composition was determined. Glasses were developed which are superior to those used by E. Snitzer. Absorption and luminescence spectra were obtained, and the dependence of the duration of luminescence on concentration was determined. Induced emission was observed both in glass fibers encased in glass and in highly homogeneous glass cylinders. The dependence of time characteristics and spectral composition of induced emission on pumping energy was established. The prospects of application of the material to practical lasers and to study of induced emission phenomena are discussed.

[BB]

Card 1/1

ACCESSION NR: AP3001358

8/0048/63/027/005/0789/0802

AUTHOR: Karapetyan, G. O.

TITLE: Luminescence of glasses with rare-earth activators [Eleventh Conference on Luminescence, Minak, 10-16 Sept. 1962]

SOURCE: AN SSSR. Izv. Seriya fizicheskaya, v. 27, no. 6, 1963, 799-802

TOPIC TAGS: fluorescence of glasses, laser effects in glass, rare-earth-doped glasses, phosphate glass laser materials, silicate glass laser materials, borate glass laser materials

ABSTRACT: Absorption and fluorescence spectra of phosphate, silicate, and borate glasses with various rare earths as activators have been studied in the range of from 4000 to 10,000 Angstroms, and the possibility of their utilization in quantum-mechanical amplifiers has been demonstrated. However, while the spectra investigated showed sufficiently sharp fluorescence lines, they also displayed narrow absorption lines, which strongly limits the efficiency of pumping light with continuous spectral characteristics. It is suggested that the selection of proper sensitizing impurities may help solve this problem. Orig. art. has: 1 figure.

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ACCESSION NR: AP3001358

ASSOCIATION: none

SUBMITTED: 00

DATE ACQ: 01Jul63

ENCL: 00

SUB CODE: 00

NO REF SOV: 007

OTHER: 004

Card 2/2

KARAPETYAN, G. O.; KARISS, Ya. E.; LUNTER, S. G.; FEOFILOV, P. P.

"The effect of glass structure on trivalent neodymium luminescence."

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

KARAPETYAN, G. O.; REYSHAKHRII, A. L.; YUDIN, D. M.

"Photoconductance as a method of studying selenium - cadmium glasses."

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

KARAPETYAN, G. O.; YUDIN, D. M.

"Studying glass structure by the method of electron paramagnetic resonance."

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

ACCESSION NR: AP4011485

S/0051/64/016/001/0063/0068

AUTHOR: Karapetyan, G.O.; Ksendzatskaya, Yu.N.; Yudin, D.M.

TITLE: Investigation of the kinetics of formation of ZnS:Mn phosphor by the method of electron paramagnetic resonance

SOURCE: Optika i spektroskopiya, v.16, no.1, 1964, 63-68

TOPIC TAGS: phosphor synthesis, manganese activated zinc sulfide, ZnS:Mn phosphor, photoluminescence, cathodoluminescence, manganese 2+, EPR, sphalerite, wurtzite

ABSTRACT: Despite the fact that there have been numerous investigations of ZnS-Mn phosphors, adequate data are still lacking on the kinetics of the synthesis process and on the formation of luminescence centers in phosphors of this type. The present work was devoted to investigation of the kinetics of formation of Mn activated zinc sulfide luminophors. There were studied the electron paramagnetic resonance spectra, the luminescence spectra and the intensity of luminescence under cathodic and ultra-violet stimulation as a function of the activator concentration, the synthesis temperature and the action of ionizing radiation. Mn activated ZnS phosphor is particularly suitable for investigation by the method of electron paramagnetic resonance

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ACC.NR: AP4011485

in view of the fact that the EPR spectrum of the Mn ion varies greatly with changes in lattice structure. The specimens were prepared in the form of powder in sealed quartz tubes 3 mm in diameter. the Mn²⁺ concentration was varied in the range from 10⁻⁵ to 8 x 10⁻⁴ g/g; the heating temperature was varied in the range from 780 to 1200°C; the heating time in the range from 5 to 30 min. The EPR and luminescence spectra are reproduced in figures. In the range of low (10⁻⁵ g/g) Mn concentrations the manganese luminescence spectrum does not undergo significant changes with variation in heating conditions, but at higher Mn concentrations significant alterations are observed. These changes are attributed, on the basis of the experimental data, to change from the sphalerite to the wurtzite structure with increase of the heating temperature. The experimental results indicate moreover, that the EPR method can be used for investigating the rate of formation of crystals, the character of the crystals and the conditions of penetration of the activator into the crystal phosphor. Orig.art.has: 5 figures and 1 table

ASSOCIATION: none

SUBMITTED: 09Apr63

DATE ACQ: 14Feb64

ENCL: 00

SUB CODE: PH

NR REF SOV: 002

OTHER: 005

Card 2/2

ACCESSION NR: AP4034940

S/0181/64/006/005/1531/1539

AUTHOR: Karapetyan, G. O.; Stepanov, S. A.; Yudin, D. M.

TITLE: Color centers in sodium aluminosilicate glasses

SOURCE: Fizika tverdogo tela, v. 6, no. 5, 1964, 1531-1539

TOPIC TAGS: glass, sodium aluminosilicate glass, color center, F center, radiation effect, radiation damage

ABSTRACT: The EPR and optical absorption spectrum of $\text{Na}_2\text{O}-\text{Al}_2\text{O}_3-\text{SiO}_2$ glasses irradiated with gamma rays from a Co^{60} source with a dose rate of 10^{-4} r/hr was investigated. The experimental data obtained are analyzed in terms of models for the production of the traps found in the literature or proposed by the authors. The interpretation of the models is expected to be helpful in making detailed calculations based on the theory of molecular orbitals. Orig. art. has: 4 figures and 1 table.

Cara 1/2

ACCESSION NR: AP4034940

ASSOCIATION: Gosudarstvennyy opticheskiy institut im. S. I.
Vavilova, Leningrad (State Institute of Optics)

SUBMITTED: 31May63

DATE ACQ: 20May64

ENCL: 00

SUB CODE: OP

NO REF SOV: 005

OTHER: 011

Card: 2/2

KARAPETYAN, G.O.; KONDRAT'YEV, Yu.N.; YUDIN, D.M.

Use of the paramagnetic resonance method in studying the
crystallization of glasses. Fiz. tver. tela 6 no.5:1554-1557
My '64. (MIRA 17:9)

1. Gosudarstvennyy opticheskiy institut imeni Vavilova, Leningrad.

L 25110-65 EWG(j)/EMP(e)/EWT(m)/EMP(t)/EMP(b)/EWA(h)/EWA(l) Pq-L/Feb IJP(c)
JD/JG/WH

ACCESSION NR: AP5003048

S/0051/65/018/001/0182/0184

AUTHOR: Kovalev, V. P.; Karapetyan, G. O.

TITLE: Sensitization of the glow of trivalent ytterbium by neodymium in silicate glass

SOURCE: Optika i spektroskopiya, v. 18, no. 1, 1965, 182-184

TOPIC TAGS: sensitization, activation, silicate glass, ytterbium, neodymium, luminescence

ABSTRACT: To determine the excitation-energy transport in neodymium-activated glass, the authors investigated the spectra and the kinetics of glow of the Nd³⁺ donor and Yb³⁺ acceptor in silicate glass for two series of samples containing 2 and 5.5% Nd₂O₃ by weight and from zero to 8% Yb₂O₃ in each series. An increase in the Yb concentration caused the fluorescence of Nd to become quenched both in intensity and in the lifetime. This indicates that the quenching occurs during the lifetime of the neodymium in the excited state, and consequently that the energy is transferred to the ytterbium ions in nonradiative fashion with inductive

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L 25410-65
ACCESSION NR: AP5003048

interaction. The transport probability is derived from the kinetic equations for the number of excited donor and acceptor ions. The transport mechanism is explained in light of the large difference between the radiative lifetimes of the donor and the acceptor. Orig. (rt. has: 3 figures and 3 formulas. (02)

ASSOCIATION: none.

SUBMITTED: 27Jul64

ENCL: 00

SUB CODE: MT, OP

NO REF SOV: 004

OTHER: 004

ATD PRESS: 3182

Card 2/2

L 12887-66 EWP(e)/EWT(m)/EWP(b) WH

ACC NR: AT6000493

SOURCE CODE: UR/0000/65/000/000/0232/0236

AUTHOR: Karapetyan, G. O.; Kariss, Ya. E.; Lunter, S. G.; Feofilov, P. P.

ORG: none

TITLE: Spectroscopic investigation of neodymium-activated glass

SOURCE: Vsesoyuznoye soveshchaniye po stekloobraznomu sostoyaniyu. 4th, Leningrad, 1964. Stekloobraznoye sostoyaniye (Vitreous state); trudy soveshchaniya. Leningrad, Izd-vo Nauka, 1965, 232-236.

TOPIC TAGS: glass property, neodymium glass, spectroscopy

ABSTRACT: The authors make a detailed study of the absorption spectra, luminescence, and duration of the excited state of neodymium in relation to glass composition, manufacturing conditions, concentration of the activator, and temperature of the specimens. Neodymium was added in concentrations from 0.1 to 10 parts to 100 parts by weight of the glass. The absorption spectra were recorded on specimens 0.2 to 100 mm thick in the region from 0.2 to 3.5 μ . Luminescence was investigated in the region from 0.8 to 2 μ . It was found that the duration of luminescence was the same in all emission bands: it did not depend on in which absorption band excitation occurred and changed with a change of glass composition, Nd concentration,

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B+1

15.44

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ACC NR: AT6000493

and temperature of the specimens from 10^{-3} to 10^{-5} sec. The Nd ion can have a coordination of from 6 to 12, with respect to oxygen, in the glasses. Investigation of the dependence of glass properties on Nd concentration revealed that the form and half-width do not change, whereas the duration of luminescence decreases monotonically. The wide bands that were noted in the spectra of the Nd-activated glass were interpreted as a superposition of narrower bands corresponding to the ions of the activator in different surroundings that were in resonant interaction, which enabled the excitation energy to migrate from one group of centers to another. Orig. art. has: 2 figures.

SUB CODE: 11, 20 / SUBM DATE: 22May65 / ORIG REF: 008 / OTH REF: 004

Card 2/2

HW

L 12885-66 EWT(1)/EWP(e)/EWT(m)/EWP(b) IJP(c) WW/GG/WH

ACC NR: AT6000495

SOURCE CODE: UR/0000/65/000/000/0254/0257

AUTHOR: Karapetyan, G. O.; Yudin, D. M.

42
B+1

ORG: none

15,44

TITLE: Investigation of the structure of glass by the electron paramagnetic resonance method

SOURCE: Vsesoyuznoye soveshchaniye po stekloobraznomu sostoyaniyu. 4th, Leningrad, 1964. Stekloobraznoye sostoyaniye (Vitreous state); trudy soveshchaniya, Leningrad, Izd-vo Nauka, 1965, 254-257

TOPIC TAGS: EPR spectrum, EPR spectrometry, phosphate glass, borate glass, glass property

ABSTRACT: This article examines the electron paramagnetic resonance spectra of trapping centers associated with lattice-forming atoms of trivalent boron and pentavalent phosphorus in order to determine the asymmetry of the coordination spheres and the role of oxidation-reduction conditions in the making of phosphate glass. The paramagnetic centers in the investigated glasses appeared after their irradiation with ionizing radiation. The lines of the hyperfine structure are resolved in the EPR spectra of borate glasses. The replacement of ^{11}B ($I = 3/2$) by ^{10}B ($I = 3$) leads to a change of the number of lines in the hyperfine structure

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L 12885-66

ACC NR: AT6000495

owing to different nuclear spins in the boron isotopes and the change of hyperfine splitting between the lines as a result of a difference in the nuclear magnetic moments of the isotopes. The appearance of numerous lines in the EPR spectra of irradiated boron anhydride is explained not only by the simultaneous presence of two different trapping centers but also by the asymmetry of the one starting center BO_3 . The oxidation-reduction conditions affect the structure of zinc-phosphate glass. The EPR spectrum for such glass made under oxidative conditions is similar to that for alkali-phosphate glass. However, under reductive conditions the usual hyperfine structure characteristic for trapping centers near phosphorus is absent and an unresolved resonance line is observed in its place. Orig. art. has: 2 figures.

SUB CODE: 11, 18 / SUBM DATE: 22May65 / ORIG. REF: 006 / OTH REF: 003

Card 2/2

HW

L 13558-66 EWT(1)/EWP(e)/EWT(m)/EWP(b)/EWA(h)/EWA(1) IJP(c) NW/GG/AI/GS/WH

ACC NR. AT6000499

SOURCE CODE: UR/0000/65/000/000/0319/0323

AUTHOR: Karapetyan, G. O.; Reyshakhril, A. L.; Yudin, D. M.

78
BT1
15.44

ORG: None

TITLE: Photoconductivity as a method for the study of selenocadmium glasses

SOURCE: Vsesoyuznoye soveshchaniye po stekloobraznomu sostoyaniyu, 4th, Leningrad, 1964. Stekloobraznoye sostoyaniye (Vitreous state); trudy soveshchaniya, Leningrad, Izd-vo Nauka, 1965, 319-323

TOPIC TAGS: photoconductivity, electron paramagnetic resonance, EPR spectrum, *CADMIUM SULFIDE, SELENIUM COMPOUND, GLASS, PHOTOEFFECT*

ABSTRACT: The photoelectrical properties of pure cadmium and selenium sulfides are quite well known; no such data, however, can be found in the literature concerning their photoeffects in oxide glasses. The present investigation covers the photoconductivity, spectra of electron paramagnetic resonance of γ -irradiated glasses, and the absorption and luminescent spectra. The paper reports on the experimental results gathered on the photoconductivity and electron paramagnetic resonance of selenocadmium glasses. Tests covered three types of glasses with 40 various activators. Each set of results is accompanied by a brief discussion concerning the possible insight they give into the structure of selenocadmium glasses. Orig. art. has: 2 figures.

SUB CODE: 11, 20 / SUBM DATE: 22May65 / ORIG REF: 005 / OTH REF: 006

Card 1/1 HW

L 11816-66 EWT(l)/EWP(e)/EWT(m)/ETC(F)/EWG(m)/T/ENP(t)/EWP(h) LIR(c) RDM/ID/IS/
ACC NR: AP6001650 AT/WH SOURCE CODE: UR/0051/65/019/006/0951/0955

AUTHORS: Karapetyan, G. O.; Kovalev, V. P.; Lunter, S. G. 61
59
8

ORG: None

TITLE: Sensitization of neodymium luminescence in glass by means of chromium 53, 27

SOURCE: Optika i spektroskopiya, v. 19, no. 6, 1965, 951-955

TOPIC TAGS: neodymium glass, glass property, luminescence, optic activity

ABSTRACT: The authors investigated the ^{21, 44, 55}energy transfer from trivalent chromium ions to Nd³⁺ ions in ¹⁵baryte crown glass¹⁵ containing 0.1 and 0.5 per cent Cr³⁺ and 0 to 5 per cent Nd³⁺. The procedure for preparing the glass was described earlier (Opt. i spektr. v. 3, 641, 1957). The purpose of the investigation was to find a co-activator for a rare-earth ion activator, satisfying the following conditions: (a) the co-activator does not absorb or quench the TR-ion luminescence, (b) the co-activator has no absorption in the absorption region of TR ion and has broad and intense absorption bands in the absorption 'windows' of the TR-ion, (c) the co-activator is capable of effectively transferring

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UDC: 535.373.2

L 11816-66

ACC NR: AP6001650

2

excitation energy to the activator ion either in a nonradiative manner or by transforming the absorbed light in the absorption region of the TR-ion. Tests with an infrared flash lamp have shown that the pair Cr³⁺-Nd³⁺ satisfies requirements (a) and (b) and that the energy transport is in the non-radiative resonant fashion. The critical transport distance is found to be approximately 18 Å. The results show that sensitization of Nd³⁺ luminescence with chromium is effective only at 77K, and can be used for more complete absorption of light from a flash lamp in a neodymium-glass laser. Orig. art. has: 6 figures. [02]

SUB CODE: 2911/ SUBM. DATE: 21Dec64/ ORIG REF: 005/ OTH REF: 008/
ATD PRESS: 412

bel
Card 2/2

GHON, G.O.; KARAPETYAN, G.O.; YODIN, D.M.

Study of diamonds using the method of electron paramagnetic resonance (EPR). Geol. i geofiz. no.5:127-131 '65.

(MIRA 13:8)

L. Vessoyuznyy nauchno-issledovatel'skiy geologicheskii Institut,
Leningrad.

L 27210-66 EWT(m)/EWP(e) WH/JD/JG

ACC NR: AP6011562

SOURCE CODE: UR/0051/66/020/003/0487/0488

AUTHOR: Karapetyan, G. O.

47
46
B

ORG: none

6

TITLE: Luminescence of glasses activated with dysprosium

SOURCE: Optika i spektroskopiya, v. 20, no. 3, 1966, 487-488^{v1}

TOPIC TAGS: dysprosium, glass, absorption spectrum, luminescence spectrum, line splitting, line width, rare earth metal^{v1}

ABSTRACT: The author reports a more detailed investigation of the absorption and luminescence spectra of dysprosium, making it possible to determine more accurately the positions of the terms of the trivalent dysprosium in glass. The glass was prepared in platinum and quartz crucibles and contained between 0.1 to 10% of dysprosium by weight. The luminescence was excited with mercury lamps at wavelengths 313, 365, 404, and 436 nm. The absorption spectrum consisted of weak bands in the regions 476, 456, 450, and 428 nm, and a few more intense bands in the ultraviolet and infrared. Variation of the dysprosium concentration in the glass did not change the absorption spectrum or the luminescence spectrum. The concentration affected the duration of the excited state, which decreased first monotonically and then exponentially with increasing concentration. The temperature variation had little effect. By

Card 1/2

UDC: 535.37:666.1/.2

L 27210-66

ACC NR: AP6011562

lowering the temperature to 77K it was possible to disclose a certain influence of the composition of the glass on the absorption and luminescence spectra of dysprosium. A pronounced splitting was observed near 480 nm, whereas at other wavelengths a slight decrease in the half-width of the lines was observed. The results are compared with the splitting of terms produced by other rare earth metals. The author thanks A. P. Abramov for measuring the duration of the excited state of dysprosium in glass.

SUB CODE: 1120/ SUBM DATE: 16Dec64/ ORIG REF: 004/ OTH REF: 004

Card

2/2 CC

L 38846-66 EWT(m)/EWP(e) GG/WH

ACC NR: AR6011873

SOURCE CODE: UR/0081/65/000/016/0009/0009

AUTHOR: Karapetyan, G. O.; Yudin, D. M.

TITLE: Electron paramagnetic resonance study of the effect of ionizing radiation on glasses of the Na₂O-B₂O₃-SiO₂ system

SOURCE: Ref. zh. Khimiya, Abs. 16M102

REF SOURCE: Sb. Stekloobrazn. sostoyaniye. T. 3. Vyp. 4. Minsk, 1964, 44-50

TOPIC TAGS: glass, gamma radiation, radiation effect, electron paramagnetic resonance, ~~IONIZING RADIATION~~, ~~LIGHT ABSORPTION~~, ~~ABSORPTION BAND~~

ABSTRACT: Spectra of supplementary absorption of γ -irradiated sodium borosilicate glasses were compared with EPR spectra. The light absorption increases with rising content of the base oxide, and the intensity of EPR signals is maximum for compositions in which $0.3 \leq N_2O / B_2O_3 \leq 1$. In the range of atomic concentration ratios $[Na]/[B] = 1$, the maximum of induced absorption bands is observed at 550 m μ , and the EPR spectra showed that such compositions were critical ones. In irradiated glasses with the same content of Li, Na, K, Rb, and Cs (20 mole %), two resonance lines were observed, one of which was in the range of the g-factor above two; the other, a narrower one, corresponded to pure quartz glass. The replacement of alkali elements led to a change in the ratio of line intensities. It is postulated that in the one case an unpaired electron interacts with a B atom which had been in coordination 3 up to

Card 1/2

63
B
15
19

L 47172-66 EWT(1)/EWT(m)/EWP(e) IJP(c) WW/WH

ACC NR: AP6032276

SOURCE CODE: UR/0020/66/170/002/0320/0322

AUTHOR: Kuprevich, V. V.; Lunter, S. G.; Karapetyan, G. O.

52
B

ORG: none

TITLE: New optical and cathodoluminescent material with glass-fiber properties

SOURCE: AN SSSR. Doklady, v. 170, no. 2, 1966, 320-322

TOPIC TAGS: cathodoluminescent material, optical glass, fiberglass, crystallized glass, zinc silicate
CRYSTALLIZATION, CATHODOLUMINESCENCE, REFRACTIVE INDEX

ABSTRACT: Studies of cathodoluminescent glass showed that in some cases thermal crystallization of glass leads to the formation of fiber-like crystals with a high refractive index ($n_D = 1.705$) in the glass phase with a much lower refractive index ($n_D = 1.481$). This increases the photoconductivity of the material. Crystallized glass with the best glass-fiber properties was obtained by thermal crystallization of glass with a composition near Zn_2SiO_4 . Electron micrographs of the new material show that Zn_2SiO_4 crystals have an elongated prismatic form with a hexagonal cross section and are oriented in the same direction. The total content of the crystalline phase was 35%. The resolution of screens (2-5 mm thick) made from this material was 50-100 and the contrast was 0.8-0.9. Addition of Mn (as activator) to the glass produced the best cathodoluminescent glass-fiber. Screens prepared from the

Card 1/2

UDC: 666.265

L 47172-66

ACC NR: AP6032276

crystalline fibers displayed good luminescence stability. Resolution, light yield, contrast, afterglow, and other properties of the cathodoluminescent glass-fiber are discussed. Orig. art. has: 3 figures. [PS]

SUB CODE:07, // SUBM DATE: 17Dec65/ ORIG REF: 003/ ATD PRESS: 5090

Card 2/2 blg

L 05701-67 EWT(m)/EWP(e) Wfi

ACC NR: AP6026354

SOURCE CODE: UR/0237/66/006/005/0022/0026

AUTHOR: Karapetyan, G. O.; Lunter, S.G.

28
B

ORG: none

TITLE: Study of the surface luminescence of glasses activated with univalent copper

SOURCE: Optiko-mekhanicheskaya promyshlennost', no. 5, 1966, 22-26

TOPIC TAGS: luminescent material, copper silicate glass, phosphate glass, borate glass

ABSTRACT: The mechanism of diffusion of copper into the surface layers of glasses of various compositions was studied by the method of tinting by etching, or cementation, in which copper diffuses into glass at a high temperature from a layer of paste deposited on the glass. Copper sulfate, chloride, and oxide were used in pastes containing aluminum oxide, kaolin, etc., and the luminescence induced in the glasses obtained by ultraviolet light was investigated by successive removal of layers. In the glass, the copper is thought to be present in the divalent, univalent, or atomic state. The yellowish-green color of the glass is due to divalent copper ions; univalent ions are responsible for the luminescence. The relative proportions of the various species of copper are markedly affected by the type of filler, copper concentration in the paste, temperature and duration of annealing, the composition of the glass, and particularly the conditions of its founding. In silicate glasses containing only alkali metal ox-

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UDC: 666.265

L 05701-67

ACC NR: AP6026354

ides, the diffusion of copper takes place through exchange of alkali metal ions with univalent copper ions. In silicate glasses containing an alkali metal oxide and alkaline earth oxide, the diffusion of copper occurs in the form of diffusion of divalent copper into the vacancies of alkaline earth elements. As the alkaline earth oxide concentration rises and the radius of the alkaline earth ion approaches that of divalent copper, the depth of penetration of the latter and luminescence intensity of the glass increase. This diffusion is sharply reduced when silicate glasses are replaced by borate and phosphate glasses, which do not become tinted and do not luminesce. It is concluded that the best tinted glasses with a small thickness of the luminescent layer and a high resolving power are silicate glasses with a high zinc or magnesium content. Orig. art. has: 5 figures.

SUB CODE: 11/ SUEM DATE: 15Nov65/ ORIG REF: 005/ OTH REF: 002

na
Card 2/2

ACC NR: AT6034036

SOURCE CODE: UR/0000/66/000/000/0143/0146

AUTHORS: Karapetyan, G. O.; Mokeyeva, G. A.

ORG: none

TITLE: Energy transfer in glass activated by terbium and dysprosium

SOURCE: Simpozium po spektroskopii kristallov, sodorzhashchikh redkozemel'nyye elementy i elementy gruppy zheliza. Moscow, 1965. Spektroskopiya kristallov (Spectroscopy of crystals); materialy simpoziuma. Moscow, Izd-vo Nauka, 1966, 143-146

TOPIC TAGS: activation energy, glass, spectrophotometry, terbium, dysprosium, luminescence, mercury lamp, spectrophotometer / Unicam SP-700 spectrophotometer, DRSh-250 mercury lamp

ABSTRACT: Studies were made on phosphate, silicate, and borate glasses of rather simple composition with varying quantities of Tb and Dy. Concentrations of Tb ranged from 1 to 10%, of Dy from 1 to 8%. Absorption spectra were recorded on a Unicam SP-700 spectrophotometer. Luminescence spectra were obtained in the range 400 to 1000 m μ at temperatures of 300 and 77K. Excitation was produced in the regions of 365 and 404 m μ by a DRSh-250 mercury lamp. It was found that an increase in Tb content in the glass led to a linear increase in luminescence, but the duration of luminescence did not depend on the concentration, attesting to reabsorption in the energy transfer from Dy to Tb. It was found that an increase in Dy content diminished the

Card 1/2

ACC NR: AT6034036

average lifetime in the $5D_3$ state and greatly weakened the short-wave band of luminescence. At the same time, a clear decrease in duration of luminescence in the $542 \text{ m}\mu$ band indicates that quenching develops at the $5D_4$ level of Tb. An examination of the absorption spectra and of the duration of luminescence of Tb and Dy shows that the duration for Tb is substantially greater than that for Dy, but the molar coefficient of absorption for Tb (484 and $489 \text{ m}\mu$) is about half the value of the $472 \text{ m}\mu$ band for Dy. This means that energy transfer takes place both by radiation from Dy to Tb and by nonradiative resonance from Tb to Dy. These results indicate that it is impossible to compute lowering of the threshold of excitation of the exciting radiation in glass excited by Tb and Dy as compared with pure Tb glass. The authors express their thanks to A. P. Abramov for his aid in the luminescent measurements. Orig. art. has: 4 figures.

SUB CODE: 07, 20/ SUBM DATE: 25May66

Card 2/2

SARUKHANYAN, F.G.; KARAPETYAN, I.O.; MOVSESYAN, G.P.

Species characteristics of yeast separated from spoiled wines.

Izv. AN Arm. SSR.Biol.nauki 16 no. 2:23-29 F '63.

(MIRA 17:7)

1. Institut mikrobiologii AN Armyanskoy SSR.

USSR / Cultivated Plants. Grains. Legumes. Tropical M-1
Cereals.

Abs Jour : Ref Zhur - Biologiya, No 2, 1959, No. 6221

Author : Yegikyan, A. A.; Karapetyan, I. O.
Inst : Armenian Scient.-Res. Agricultural Institute
Title : The Selection of Corn Parental-Pairs in Order
to Obtain Productive Hybrids

Orig Pub : Byul. nauchno-tekhn. inform. Arm. n.-i. in-t
zemledeliya, 1957, No 3, 3-5

Abstract : Data, collected at the Parakarsk Experimental
Base as a result of trials of varieties, var-
ietal strains, inter strain hybrids, hybrid
populations and inter varietal hybrids in
1955-1960, is given in this paper. All var-
ieties were distributed into 5 groups accord-
ing to the time of sowing. Dent corn varieties

Card 1/

USSR / Cultivated Plants. Grains. Legumes. Tropical M-1
Cereals.

Abs Jour : Ref Zhur - Biologiya, No 2, 1959, No. 6221

are more productive than the flint corn. The yield of prospective varieties attained 23 - 35 cwt/ha. The hybrid populations, double inter-strain, and varietal strain hybrids produce the best yield of cobs and of green mass (30 - 49 cwt/ha); simple inter strain hybrids are less productive. The highest yield (28 - 47 cwt/ha) was produced by the following combinations: Flint white Gruzinskaya No 10 x Sterling, Flint yellow Tumanyan x Gorskaya yellow, Flint yellow Tumanyan x Voronezh 76, Grushevskaya x Early Gorets, Early Gorets x Minnesota 13 and Char'kov white dent x Sterling. These parental pairs are recommended to obtain inter varietal hybrid seeds. -- A. F. Khlystova

Card 2/2

AKHINYAN, R.M.; KARINYAN, R.S.; KARAFETYAN, I.C.

Effect of stimulants on the vitality of yeast. Vop. mikrobiol.
no.2:161-169 '64. (MIRA 18:3)

SEVOYAN, A.G.; KARAPETYAN, I.O.

Interrelationship among some yeast species. Vop. mikrobiol. no.2.
195-209 '64. (MIRA 18:3)

SARUKHANYAN, F.G.; SEVOYAN, A.G.; MOVSESYAN, G.P.; KARAPETIAN, I.G.

Biological characteristics of *Saccharomyces cereanus* var. *armeniensis*
and its practical significance. Izv. AN Arm. SSR. Biol. nauki 18
no.33-10 Mr '65. (MIRA 18:5)

1. Institut mikrobiologii AN ArmSSR.

KARAPETYAN, I.S., aspirant

Antithyroid action of penicillin. Stomatologia 35 no.3:30-32
My-Je '56. (MLRA 9:9)

1. Iz kafedry khirurgicheskoy stomatologii (zav. - prof. A.I.
Yevdokimov) Moskovskogo meditsinskogo stomatologicheskogo instituta
(dir. - dotsent G.N.Beletskiy)
(PENICILLIN) (THYROID GLAND)

KARAPETYAN, I.S., aspirant

Effect of perimaxillary phlogmonous processes on the functions of the thyroid gland. Stomatologia 35 no.6:44-47 N-D '56 (MLRA 10:4)

1. Iz kafedry khirurgicheskoy stomatologii (zav.-prof. A.I. Yevdokimov) Moskovskogo meditsinskogo stomatologicheskogo instituta (dir.-dotsent G.N. Beletskiy)
(JAWS--DISEASES) (THYROID GLAND)

KARAPETYAN, I.S. Cand Med Sci -- (diss) "Function of the thyroid
gland in acute ^{purulent} ~~pussy~~ peri-maxillary inflammation ^{dry} ~~ion~~ processes. (phlegmon)"
Mos, 1957. 9 pp 22 cm. (Min of ~~Public~~ Health RSFSR. Mos Med Stomatological
Inst). 150 copies. (KL, 9-56, 103)

-38-

KARAPETYAN, I. S.

Study of thyroid function following tuberculous lupus. Stomatologia
38 no.4:48-49 J1-Ag '59. (MIRA 12:12)

1. Iz kafedry khirurgicheskoy stomatologii (zav. - prof. A.I. Yevdoki-
mov) Moskovskogo meditsinskogo stomatologicheskogo instituta (dir -
dotsent G.N. Beletskiy).

(THYROID GLAND)

(LUPUS)

CHEKIN, V.F.; KARAPETYAN, I.S.

Stomatological instruments with a diamond coating. Stomatologia
40 no.4:99 J1-Ag '61. (MIRA 14:11)

1. Nauchno-issledovatel'skogo instituta eksperimental'noy khirurgiche-
skoy apparatury i instrumentov (dir. M.G.Anan'yev).
(DENTAL INSTRUMENTS AND APPARATUS)

KARAPETYAN, I.S.

Use of drills in the resection of the osseous rings of the
greater palatine foramen. Stomatologiya 41 no.5:93-94 S-0
'62. (MIRA 16:4)

1. Iz kafedry khirurgicheskoy stomatologii (zav. - prof.
A.I.Yevdokimov) Moskovskogo meditsinskogo stomatologicheskogo
instituta.

(PALATE--SURGERY)

KARAPETYAN, I.S.

Removal of a tattoo by skin decortication. Sov. med. 27 no.11:
145-148 N 163 (MIA 1401)

1. Iz khirurgicheskogo otdeleniya Instituta voprosy kosmetiki (direktor A.F. Akhbadze) Ministerstva zdravneriya RSFSR.

KARAPETYAN, I.S.; KOKHOVA, G.M. (Moskva)

Orthodontic spring lock. Stomatologia 42 no.4:100-101 Ji-Ag'63
(MIRA 1784)

1. Nauchno-issledovatel'skiy institut eksperimental'noy khirurgicheskoy apparatury i instrumentov.

SENDAROVICH, F.G.; KARAPETYAN, I.S.; KHAZIZOVA, O.Kh.; VASILEVSKAYA, Z.F.;
GRINSHPUN, E.I.; MAKAROVA, L.A.

Tubage as a means of increasing the effectiveness of electro- and
med therapy in chronic infectious cholecystitis. Sbor. nauch. rab.
vrach. san.-kur. uchr. profsoiuzov no.1:132-135 '64.

(MIRA 18:10)

1. Yessentukskiy bazovyy sanatoriy im. F.E.Dzerzhinskogo (glavnyy
vrach - zasluzhennyy vrach RSFSR V.N.Ivanov, nauchnyy rukovoditel' -
kand.med.nauk V.N.Denskov).

KARAPETIAN, K.

New building of the Central Museum of the Soviet Army. Voen.
vest. 39 no.11:78-79 N '59. (MIRA 13:3)

1. Zaveduyushchiy sektorom nauch-ekspositsionnogo otdela Tsentral'nogo
museya Sovetskoy Armii.
(Moscow--Military museums)

KARAPETYAN, K.

Our Army is a school of culture. Voen.vest. 39 no.2:73-84 F '60.
(Russia--Army--Education, Nonmilitary) (MIRA 14:2)

KARAPETYAN, K.

Relics of military glory. Voen. znan. 37 no. 2:9 F '61.

(Firearms)

(MIRA 14:1)

KARAPETYAN, K.A.

USSR/Morphology of Man and Animals (Normal and Pathologic).
The Musculature.

S-5

Abs Jour : Ref Zhur - Biol., No 4, 1958, 17102

Author : Karapetyan, K.A.

Inst :

Title : Development of Muscles of the Tongue and Their Neural
Apparatus in Man.

Orig Pub : Dokl. AN SSSR, 1956, 106, No 1, 140-143.

Abstract : In embryos with a crown-rump length of 13 mm there is as yet no division into muscle layers in the mesenchymal tongue rudiment. In the area at the bottom of the primary oral cavity, there appears a fan-like distribution of columns of mesenchymal syncytial nuclei representing rudiments of skeletal muscles of the tongue. The degree of differentiation decreases toward the tip of the tongue. In 25 mm embryos myofibrils appear on the periphery of the nuclear columns. Muscle tubules appear first in the

Card 1/3

*Acad. Med. Sci USSR, Anat Exper. Med. and Yerevan Med. Inst.*USSR/Morphology of Man and Animals (Normal and Pathologic).
The Musculature.

S-5

Abs Jour : Ref Zhur - Biol., No 4, 1958, 17102

root of the tongue in 27 mm embryos. Bundles of primitive cable-like nerve fibers are already found in 13 mm embryos; more or less distinct nerve endings in the tongue muscles were revealed in 65 mm embryos. At first, being similar to the cable-like structure of the nerve fibers, the motor endings have a group character. With myelination and isolation of single nerve fibers, the appearance of isolated motor endings occurs (120 mm embryos). This coincides with the processes of further differentiation of muscle fibers: muscle tubules become thicker and longer and a greater number of myofibrils appear. The muscle nuclei are displaced from the center toward the periphery. The aforementioned alterations are observed earlier in the skeletal muscles than in the muscles of the tongue proper, a fact which is in keeping with the developmental sequence of the tongue's motor functions in regard to both ontogeny and

Card 2/3

17(1)

AUTHOR:

Karapetyan, K. A.

SOV/20-122-5-50/56

TITLE:

The Development of the Lingual Mucous Membrane and Its Innervation in the Course of Embryogenesis in Man (Razvitiye slizistoy obolochki yazyka i yeye innervatsiya v embriogeneze u cheloveka)

PERIODICAL:

Doklady Akademii nauk SSSR, 1958, Vol 122, Nr 5, pp 928-931 (USSR)

ABSTRACT:

Embryos and feti of all age groups beginning with a length of 13 mm as well as new-borns in the postembryonic time were investigated with a view to the problem mentioned in the title. In the 13 mm long embryo the tongue consists of two or one mesenchym covered with epithelium. No signs of a differentiation of a future mucous membrane can be found. The whole epithelium consists of three layers, in some places of two or one layer. The whole surface of the tongue is still smooth. Hardly noticeable bundles of primitive nerve fibers become visible in its mechanism. The separation of the tongue into a future mucous membrane and a muscle layer can already be found with a 20 mm long embryo. The mucous membrane is covered by a two-layer epithelium. At the boundary of the mesenchym and the

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The Development of the Lingual Mucous Membrane and
Its Innervation in the Course of Embryogenesis in Man

SOV/20-122-5-50/56

epithelium there is a thin layer of argyrophilic fibers. The author cannot accept the data by T. Hellman (Gel'man)(Ref 1) that the dorsal multilayer flat epithelium formed in the course of histogenesis was already multilayered with the 16-30 mm long embryo, and that it was two-layered at the side. According to the author's opinion the flat epithelium formed during histogenesis forms the most differentiated stage. In the place, however, where the rapid process of new formation of the papillae of the tongue (sosochni yazyka) takes place the epithelium has not yet finished its differentiation. In the course of the differentiation process single ciliated cells (Fig 1) as well as whole groups of such cells (Ref 3) (they were found only with grown-up people) are formed at a certain stage of the embryonic development under the surface epithelium cells of the dorsal and lateral surface of the tongue. During the histogenesis of the epithelium of the back of the tongue concentric parathyroid glands (epithelial pearls according to Schaff - in this paper called Shaffer, Ref 4) are formed. When they become larger they sink into the connective tissue below them and are grown around by nerve fibers (Fig 2).

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The Development of the Lingual Mucous Membrane and Its Innervation in the Course of Embryogenesis in Man SOV/20-122-5-50/56

The formation of the groove-like (zhelobovatyie) and leaf-shaped (listovidnyie) papillae (sosochki) takes place in 113-120 mm long embryos, while around the papillae grooves and fissures are formed. At about this stage the mushroom-like papillae (gribovidnyie sosochki) are sufficiently developed. The thread-like papillae remain smaller during the embryonic period. They acquire a thread-shape only in the post-embryonic period. The differentiation of the epithelial cells and their re-formation to gustatory papillae (wkusovyye lukovitsy) takes place in 65 mm long embryos, i.e. earlier than the three last mentioned types of papillae. There is reason to believe (Refs 5, 6) that this takes place under the influence of some nerve impulses. The 90 mm long embryo (age: 12 weeks) has already deglutition reflexes and begins to swallow the amniotic fluid (Ref 7). The especially interesting innervation of the mucous membrane of the tongue during the embryonic and postembryonic period is described in detail. A considerable part of the complex receptor endings in the mucous membrane of the human tongue is formed during the postembryonic period, probably under the

Card 3/4

The Development of the Lingual Mucous Membrane and
Its Innervation in the Course of Embryogenesis in Man

SOV/20-122-5-50/56

ASSOCIATION:

influence of the mechanic and other influences that become
much stronger (different types of food, temperature, etc.). There
are 4 figures and 13 references, 5 of which are Soviet.

Institut eksperimental'noy meditsiny Akademii meditsinskikh
nauk SSSR (Institute of Experimental Medicine of the Academy
of Medical Sciences USSR)

Yerevanskiy meditsinskiy institut (Yerevan Medical Institute)

PRESENTED: May 26, 1958, by N. N. Anichkov, Academician

SUBMITTED: May 20, 1958

Card 4/4

KARAPETYAN, K.A

Centralized disinfection of cotton seeds in Armenia and tests of some new treating agents. A. A. Babayan and K. A. Karapetyan (Armenian Sci. Research Inst., Tech. Cultures, U.S.S.R.). *Izv. Akad. Nauk Armyan. S.S.R., Biol. i Sel'sk. Nauch.* 7, No. 5, 15-25 in Russian; 28, in Armenian (1954). Treatment of cotton seeds with NIUP-4 (Grantsan) gave good seed disinfection in comparison with formalin treatment; although the machinery used for the application showed deficiencies of mechanical nature. Non-Hg deriv. tested included tetrachlorobenzquinone, tetracetylthiuram disulfide, and Cu t. chlorophenolate; only the latter appeared to give satisfactory results as a bactericide; the quinone deriv. affects seed viability.

G. M. Kosolapoff

(1)

RABAYAN, A.A.; KARAPETYAN, K.A.

Effectiveness against gummosis of mechanical delinting of seeds with
sulfuric acid. Izv. AN Arm. SSR. Biol. i sel'khoz. nauki 7 no.10:57-64
0 '54. (MLRA 9:8)

1. Armyanskiy nauchno-issledovatel'skiy institut tekhnicheskikh
kul'tur, g. Echmiadzin.
(Cottonseed) (Sulfuric acid) (Gummosis)

BABAYAN, A.A.; KARAPETYAN, K.A.;

Singeing as a measure for delinting and disinfecting cottonseed
against gummosis. Izv. AN Arm. SSR. Biol. i sel'khoz. nauki 8 no.1:
39-43 Ja '55. (MLRA 9:8)

1. Armyanskiy nauchno-issledovatel'skiy institut tekhnicheskikh
kul'tur Ministerstva sel'skogo khozyaystva SSSR.
(Cottonseed) (Gummosis) (Seeds--Disinfection)

BABAYAN, A.A.; KARAPETYAN, K.A.

Centralized disinfection of cotton seeds in Armenia and testing of some new disinfectants. Izv.AN Arm.SSR.Biol.i sel'khoz.nauki 7 no.5:15-26 My '56. (MLRA 9:8)

1. Armyanskiy nauchno-issledovatel'skiy institut tekhnicheskikh kul'tur Ministerstva sel'skogo khozyaystva SSSR, g. Echmiadzin.
(Armenia--Cottonseed) (Seeds--Disinfection)
(Ethylmercuric chloride)

USSR/Plant Diseases. Diseases of

KARAPETYAN, K.A.

Abs Jour: Ref Zhur-Biol., No 6, 1958, 25360.

Author : Babayan, A.A., ~~Karapetyan, K.A.~~, Sarkisyan, M.A.
Inst : The Armenian Scientific Research Institute for
Agriculture.

Title : The Effectiveness of Copper Trichlorophenolate and
Other Fungicides Against Cotton Gummosis.
(Ob effektivnosti trikhlorfenolyata medi i drugikh pro-
traviteley protiv gommoza khlopchatnika).

Orig Pub: Byul. nauchno-tekhn. inform. Arm. n.-i. in-t zemled.,
1957, No 2, 20-22.

Abstract: No abstract.

Card : 1/1

9

BABAYAN, A.A.; KARAPETIAN, K.A.; SARKSIAN, M.A.

Biologic and antibiotic disinfection of cottonseed for the control of gummosis. Agrobiologia no.5.:101-104 S-0 ' 58. (MIRA 11:11)

1. Institut zemledeliya, g. Echmiadzin, Argyanskaya SSR.
(Cotton--Diseases and pests) (Gummosis)

Karapetyan, K.A.

KAZARYAN, V.O.; AVUNDZHYAN, E.S.; KARAPETYAN, K.A.

Effect of the rootstock on vital processes in graft leaves.
Dokl. AN Arm. SSR 26 no.2:113-117 '58. (MIRA 11:5)

1. Botnicheskiy institut Akademii nauk Armyanskoy SSR. Predstavleno
M.A. Ter-Karapetyanom. (Grafting)

KAZARYAN, V.O.; AVUNDZHIAN, E.S.; KARAPETYAN, K.A.

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3(5)

SOV/172-11-5-5/9

AUTHOR: Karapetyan, K.I.

TITLE: Fulgurite Developments in the Igneous Products of Certain Slag Cones of Daralagez (Ful'guritovyye obrazovaniya v eksplozivnykh produktakh nekotorykh shlakovykh konusov Daralageza)

PERIODICAL: Izvestiya Akademii nauk Armyanskoy SSR, Seriya geologicheskikh i geograficheskikh nauk, 1958, Vol 11, Nr 5, pp 47-50 (USSR)

ABSTRACT: In the volcanic center of the Dzhermuk Highland "Muraslar" volcanic glass has been found in the form of sinter, kidney-shaped or drop-like. The glass has a characteristic brilliance and is either light- or dark green; it takes on odd, tubular forms, varying in diameter from 0.5 to 2 cm, not exceeding 10 - 15 cm in length. At times the glass shows up as blots on the surface of agglutinated strata, measuring 5 - 6 cm in diameter. In this case, the cooling glass has taken the shape of a drop, set in a funnel-shaped recess with the adjoining rock being of a similar glass like substance, which shows that in contact with the glass the oxidized rock has changed its color to light gray down to a depth of 2 - 3 mm from the fringe of the glass. The author is of the opinion that certain con-

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SOV/172-11-5-5/9

Fulgurite Developments in the Igneous Products of Certain Slag Cones of Daralagez

ditions tend to indicate that these formations are not of volcanic origin, but due to fulgurite development, which is also born out by the fact that glass sinters are only to be found on high points, which are characterized by intensive development of burnt crust on the flow of effusive lava [see also "crust fulgurites" (Korkovyye ful'gurity) by G.K. Gabrielyan]. There are 2 sets of diagrams, 1 photo and 1 Soviet reference.

Card 2/2

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