

L 2606B-66
ACC NR: AP6003449

10

The characteristics of atmospheric absorption of linear radiation of heated gases (H_2O vapors) in the near-infrared region of the spectrum were examined in a report by E. S. Kuznetsova and M. V. Podkladenko.

The latter also delivered a paper on the limits of applicability of schematic models of absorption bands in describing experimental results.

Investigations of the absorption by a horizontal atmospheric layer of the radiation of a slightly heated absolutely black radiator were reported by B. P. Kozzyrev and A. P. Buznikov (Leningrad Electrical Engineering Institute imeni V. I. Ul'yanov). Ye. P. Barashkov delivered a paper on the change of the spectral composition of long-wave ascending fluxes in the lower layers of the troposphere under the influence of absorption.

A theoretical investigation of the influence on the absorption-line profile of strong absorption and a strong electromagnetic field was made by L. I. Nesmelova, S. D. Tvorogov, N. I. Ippolitov, and A. A. Orlov (Siberian Physicotechnical Institute).

Other reports read were: K. P. Vasilevskiy, V. A. Kazbanov, and T. Ye. Derizt, on the results of experimental investigations of the spectrum of CO_2 absorption in the $2.06\text{-}\mu$ region and the patterns of distribution of optical cross sections for individual lines of a band; V. I. Dianov-Klokov

Card 4/7

I. 26068-66

ACC NR: AF6003449

(Institute of Physics of the Atmosphere), on the expected influence of $[O_2]_2$ and $[O_2 - N_2]$ complexes on the transparency of the atmospheric ground layer in the $0.28-0.235\text{-}\mu$ region; V. A. Afanasyev, A. V. Nevskiy, M. A. Katintsev, and V. G. Naberezhnyy, on the design of an installation, based on the principle of heterodyning, to measure the atmospheric attenuation of a laser beam; Yu. S. Georgiyevskiy, V. I. Dianov-Klokov, S. V. Ovechinnikov, and G. D. Turkin (Institute of Physics of the Atmosphere), on the design of instruments to measure the spectral transparency of the atmosphere with automatic compensation for interference caused by atmospheric turbulence.

Many reports were on the problem of light scattering in the atmosphere and the theory of multiple light scattering, including, for example, L. M. Romanov (Institute of Physics of the Atmosphere), on radiation transfer in forbidden bands of absorption; O. I. Smoktiy (Leningrad State University), on computing the sphericity of the atmosphere; G. M. Krekov (Siberian Institute), on computing the intensity of light at small angles in the case of large scattering particles; L. M. Romanov, L. I. Koprov, and M. S. Malkevich (Institute of Physics of the Atmosphere), on the influence of scattering in the atmosphere on spectral transparency; L. G. Borovoy (Tomsk State University), on computing a mean field in a scattering medium on the basis of Maxwell equations. N. P. Kalashnikov and M. I.

Card 5/7

I 26068-66
ACC NR: AP6003449

16

Ryazanov (Moscow Engineering Physics Institute) reported on the use of the quantum mechanical approach to investigate the passage of a narrow beam of light through a scattering medium. A. P. Ivanov (Institute of Physics of the Belorussian Academy of Sciences) reported on the results of an experimental study of a light field in models of strong scattering media. The results of investigating the optical properties of clouds on model media were contained in a report by G. K. Il'ich (Institute of Physics of the Belorussian Academy of Sciences), K. S. Shifrin, A. Ya. Perelman, and V. G. Eshitarianov (Main Geophysical Observatory imeni A. I. Voyeykov) described a method of computing the spectra of scattering particles from data on the spectral transparency of the atmosphere and indicated certain criteria for selecting spectral intervals. Yu. S. Lyubovtseva (Institute of Physics of the Atmosphere) reported on measurements of light scattering at small angles and on the influence of such scattering on the results of measuring the spectral transparency of the atmosphere. In M. V. Kabanov's (Siberian Institute) work, interference in the case of light scattering at small angles, was investigated. The report of T. P. Toropova (Astrophysical Institute of the Kazakh Academy of Sciences) described a study of the scattering properties of the atmosphere in different spectral regions. G. Sh. Lifshits, V. Ye. Pavlov, and S. N. Milyutin (Astrophysical Institute of the Kazakh Academy of Sciences) used the Ulbricht

Card 6/7

L 25068-66

ACC NR: AP6003449

9
light-measuring sphere to investigate pure-light absorption in aerosols. V. K. Sonchik, V. P. Lopasov, and N. A. Chernyavskaya (Siberian Institute) presented a report on the results of measurements of complex indices of water in the 2 to 20- μ region.

Several reports were presented on investigations of artificial fogs. For example, B. P. Kozyrev and A. V. Mezenov (Leningrad Electrical Engineering Institute) reported on their studies of the attenuation of long-wave radiation in artificial fogs for regions of the spectrum from 0.5 to 200 μ . The report of B. P. Kosheleva (Tomsk State University) compared experimental and computational data on the coefficient of radiation attenuation in artificial fogs in the 0.42--14- μ region. In these experiments a detailed measurement of the parameters of the microstructure of the fog was made simultaneously. The results of experimental and theoretical investigations of strong fluctuations in light propagation in a turbulent atmosphere were reported by V. I. Tatarsky, A. S. Garvich, M. Ye. Gracheva (Institute of Physics of the Atmosphere). And, lastly, N. P. Nalimov reported on the effects of atmospheric turbulence on laser communications. [FSB: v.2, no. 3]

SUB CODE: 04, 20 / SUBM DATE: none

Card 7/7 C C

1.1208-17 AMT(1) ON
ACC NO: AP7002076

SOURCE CODE: UR/0362/66/002/003/01,914/0500

AUTHOR: Georgiyevskiy, Yu. S.

ORG: Institute of Physics of the Atmosphere, AN SSSR (Institut fiziki atmosfery AN SSSR)

TITLE: Apparatus for investigating the spectral transparency of the atmosphere with high resolution

SOURCE: AN SSSR. Izvestiya. Fizika atmosfery i okeana, v. 2, no. 5, 1966, 494-500

TOPIC TAGS: atmospheric transparency, spectrometer

Apparatus for measuring the spectra of atmospheric transparency in the region 0.37-1.14 μ m with a resolution of 1-2 \AA as described. The apparatus is part of the field apparatus created at the optical test grounds of the Institute of Physics of the Atmosphere near Zvonigorod, designed for multidirectional investigation of the optical properties of the atmosphere. There are two main parts: receiving-recording (a spectral instrument and a recorder) and a measuring path. Fig. 1 is block diagram. Fig. 2 is a photograph of the apparatus. The apparatus is situated within a fenced enclosure on a concrete base. The measuring path passes over a field surrounded by a semicircle of trees, 2-3 m above

Card 1/2

UDC: 551.593.52

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ACC NR: AP7003076

the soil surface. The length of the path can be varied up to 1,300 m. 4
A DFS-12 spectrometer -- double mirror monochromator with flat diffraction grating -- is used (600 lines/mm, working area 140x150 mm). Photomultipliers are used in the recording. The apparatus can be used either anytime or nighttime. The author thanks G. V. Rozenberg and V. I. Dianov-Klokov for his interest in this work and for his valuable advice. He also thanks V. S. Dudikov and V. Ya. Usachev for assistance in the completion of this work. Orig. art. has: 8 figures. [JPRS: 37,710]

SUB CODE: 04 / SUBM DATE: 02Nov65 / ORIG REF: 001

GEORGJEVIC, E.

Dr. Lea Schmidt and D. Philips' Granuloze - nova virusna bolest na dudovcu, Hyphantria cunea Drury (Granulose, New Mulberry Virosis Disease, Hyphantria cunea Drury); a book review. p. 388.

NARODNI SUMAR. (Društvo sumarskih inženjera i tehničara Bosne i Hercegovine) Sarajevo, Yugoslavia. Vol. 12, no. 4/6, Apr./June 1958.

Monthly List of East European Accessions (EEAI) LC Vol. 9, no. 2, Feb. 1969.

Uncl.

GEORGLADES, Jarey

Vaccination with Koprowski's live attenuated polio vaccine in the area of Gdansk and Olsztyn provinces. III. Investigations of the rise of antibodies in the course of vaccination with Koprowski's live, attenuated polio vaccine. Bull. Inst. Marine M Gdansk 12 no.1/2:37-44 '61.

(POLIOMYELITIS immunitas) (VACCINATION)

GEORGOBI, A.N.; FOK, M.V.

Main peaks in the brightness waves of electroluminescence.

Opt. i spektr. 9 no. 6:775-781 D '60. (MIRA 14:1)

(Luminescence) (Zinc sulfide)

SOV/51-5-2-11/26

AUTHORS: Georgobiani, A.N. and Fok, M.V.

TITLE: Investigation of Relaxational Processes in Electroluminescence
(Issledovaniye relaksatsionnykh protsessov pri elektroluminestsentsii)

PERIODICAL: Optika i Spektroskopiya, 1958, Vol 5, Nr 2, pp 167-171 (USSR)

ABSTRACT: The authors studied relaxational processes in emission by an electroluminescent capacitor in order to elucidate the role of polarization charge in electroluminescence. This polarization charge is produced in separate grains of the phosphor (surrounded by a dielectric) by the action of the external alternating electric field. The magnitude and distribution of the polarization charge depend on the amplitude of the applied field, rate of change of this field and sometimes on previous history of the capacitor. The polarization charge distorts the field in the capacitor and concentrates it in a certain small region. Thus in an electroluminescent capacitor we have two regions: a region of high-field concentration and a field-free region. To study the processes occurring in these two regions the authors made some measurements on capacitors with $ZnS-Cd,Al$ phosphors. All measurements were made using symmetrical trapezoidal pulses of 200 μs

Card 1/3

SOV/51-5-2-11/26

Investigation of Relaxational Processes in Electroluminescence

frequency, 300 V amplitude and the pulse-front slope of 1.42 V/ μ sec. The thickness of the capacitor was 0.2 mm. The authors investigated the form of brightness waves, the ratio between the alternating and constant components of electroluminescence as a function of the form of the trapezoidal pulses, the effect of red and infrared light on the form of brightness waves, and oscillograms of rise curves of electroluminescence. The ZnS-Cu,Al phosphors used had from 5×10^{-4} to 3×10^{-3} g/g of Cu, and from 3×10^{-4} to 2×10^{-3} g/g of Al. The phosphors were prepared at 1100°C in H₂S or at 1000°C in a mixture of H₂S and HCl. The following results were obtained. (A) The brightness waves had the form shown in Fig 1 (curves 1). Curves 2 in Fig 1 show the applied trapezoidal voltage pulses. (B) Mean brightness of luminescence depends on the amplitude and frequency of the applied field, and on the slope of the pulse-front (Fig 2). (C) The ratio of the constant and alternating components of electroluminescence depends both on frequency and the slope of the pulse front on the applied field and is practically independent of the field amplitude (Fig 3). (D) De-excitation with long-wavelength light has a stronger effect in phosphors which can store large light-sums and in this case only the constant component of electroluminescence is decreased. In phosphors which store small light-sums red light lowers

Card 2/3

SOV/51-5-2-11/26

Investigation of Relaxational Processes in Electroluminescence

also the alternating component. (E) When the alternating field is switched on the constant and alternating components of electroluminescence grow at different rates (the constant component grows more slowly as shown in Fig 4). The authors give the following tentative explanation for the observed behaviour of ZnS-Cu,Al. The field-free region in the capacitor extends throughout most of the capacitor and the region of high field concentration is near the electrodes. The alternating component of electroluminescence arises from liberation and subsequent recombination of electrons in the high-field region. The constant component of electroluminescence is due to processes affecting holes and electrons, which occur in the field-free region. There are 4 figures and 3 Soviet references.

ASSOCIATION: Fizicheskiy institut im. P.N. Lebedeva, AN SSSR (Physics Institute imeni P.N. Lebedev, Academy of Sciences of the U.S.S.R.)

SUBMITTED: September 26, 1957

Card 3/3

1. Phosphors--Luminescence
2. Electromagnetic waves--Polarization
3. Electromagnetic fields--Applications

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S/051/60/009/006/011/018
E201/E314

24.3500

AUTHORS: Georgobiani, A.N. and Fok, M.V.

TITLE: Principal Peaks of Electroluminescent Brightness Waves

PERIODICAL: Optika i spektroskopiya, 1960, Vol. 9, No. 6, pp. 775 - 781

TEXT: The authors studied ZnS:Cu:Al phosphors with 10^{-5} g-atom/g-mole Cu and 10^{-4} g-atom/g-mole Al. An oscillogram of the electroluminescent brightness (Curve II) is shown together with an oscillogram of the exciting sinusoidal voltage (Curve I) in Fig. 1. The brightness consists of an alternating component, known as the brightness wave, and a constant component denoted by B. The brightness wave has a principal peak, denoted by A, during each half-period of the exciting voltage. Under some conditions a subsidiary peak (B) appears in the brightness wave; this peak is usually weaker than the principal peak. The two peaks are resolved better when the exciting voltage waveform is trapezoidal (Figs. 2, 3). Fig. 4 shows positions of the principal brightness peak as a function of the

Card 1/8

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E201/E514

Principal Peaks of

amplitude of voltage pulses. Figs. 5, 6, 7 give the "critical voltage" as a function of the front rise-time of voltage pulses (Fig. 5), and as a function of temperatures (Figs. 6 and 7). By the critical voltage the authors mean the voltage which empties even the deepest localization levels in the phosphor. The form of the brightness waves showed that, at high applied voltages, electrons were liberated primarily by electric fields. At low applied voltages electrons were freed by collision ionization (at low temperatures) or by tunnelling through potential barriers (at high temperatures). The optical phonon energies and the energy depths of local levels in ZnS were found from the values of the critical field intensities at which complete liberation of trapped electrons occurred. The optical phonon energies found in this way were in good agreement with values deduced from the vibrational structure of the "edge luminescence" spectrum. The level depths agreed with the donor depths found from the equilibrium density of free electrons in ZnS:Cu crystals.

Card 2/7

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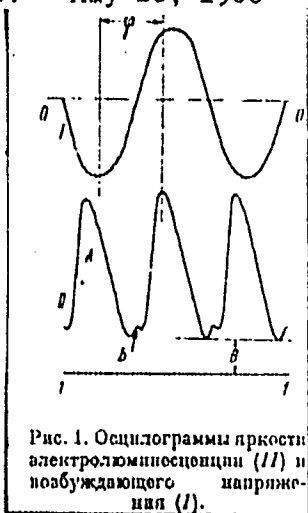
Principal Peaks of

S/051/60/009/006/011/013
E201/E314

There are 7 figures, 2 tables and 13 references: 6 Soviet and 7 non-Soviet.

SUBMITTED: May 26, 1960

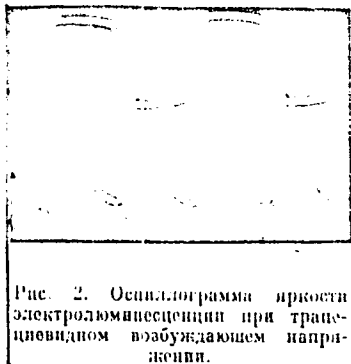
Fig. 1:



Card 3/8

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Fig. 2:



4

GEORGOBIANI, A. N.

Cand Phys-Math Sci - (diss) "Kinetics of electro-luminescence of ZnS-Cu (Destrict effect)." Chernovtsy, 1961. 9 pp; (Ministry of Higher and Secondary Specialist Education Ukrainian SSR, Chernovits State Univ); 150 copies; price not given; (KL, 7-61 sup, 218)

GEORGOBIANI, A.N.; FOK, M.V.

Process determining the voltage dependence of the mean brightness
of electroluminescence. Opt. i spektr. 10 no.2:188-193 F '61.
(MIRA 14:2)

(luminescence)

GEORGOBIANI, A.N.; FOK, M.V.

Dependence of the phase of brightness waves of electroluminescence
on the parameters of the exciting voltage. (Opt.i spektr. 11
no.1:93-97 J1 '61. (MIRA 14:10)
(Luminescence)

GEORGOBIANI, A.N.

Excitation of electroluminescence in zinc sulfide. Opt. i spektr.
11 no.3:426-428 S '61. (MIRA 14:9)
(Luminescence) (Zinc sulfide)

S/051/62/012/006/009/020
E036/E418

AUTHOR: Georgobiani, A.N.

TITLE: The influence of the bond type of crystal phosphors
on their electroluminescent ability

PERIODICAL: Optika i spektroskopiya, v.12, no.6, 1962, 746-749

TEXT: A qualitative comparison is given of the ability of materials with ionic and with covalent type bonding to display electroluminescence. To produce electroluminescence it is necessary that there are mobile charges in the crystal which are accelerated by the applied field to excite the radiation by collision processes. The motion of the charged carriers is impeded particularly by lattice vibrations. In ionic crystals, in which alternate atoms are differently charged, the local field, due to the atomic vibrations, greatly exceeds the applied field and reduces the carriers mean free path to the order of the lattice constant, and they cannot acquire sufficient energy to cause ionization or excitation by collision. Local fields are much less in covalent bond crystals and the mean free paths are several times larger; the carriers can acquire large energies
Card 1/2

The influence of the bond type ...

S/051/62/012/006/009/020
E036/E418

to give impact ionization. The covalent type crystals are also more likely to support large fields in limited regions of the crystal because of the ease of formation of space charge. The advantages of covalent bonding in supporting electroluminescence are illustrated by its non-occurrence in crystals with more than 50% ionic bonding. The possession of other luminescent properties is also required for a material to show electroluminescence and thus it is not expected in the elementary semiconductors which have no ionic bonding. There is 1 table.

SUBMITTED: April 8, 1961

Card 2/2

3002
S/051/62/012/006/020/020
E039/E420

AUTHORS: Georgobiani, A.N., Golubeva, N.P.

TITLE: The excitation of electroluminescence in alkali-halide compounds

PERIODICAL: Optika i spektroskopiya, v.12, no.6, 1962, 802-803

TEXT: The influence of the type of bond structure on the excitation of electroluminescence discussed in a previous paper is reviewed. Calculations are made on the excitation of electroluminescence in alkali-halides and compared with experimental results obtained for thin ($\sim 1 \mu$) films of CsI.Tl, prepared by sublimation in a vacuum. The sublimated mixture contained 94% CsI and 6% TlI. A layer of aluminium formed a secondary electrode and a film of barium titanate was used as a protective coating. Excitation was accomplished by the application of about 120 V at 20 kc/s and the electroluminescent spectrum compared with the luminescent spectrum excited by radiation from a $\gamma\Phi\text{O}$ (UFO) lamp using a $\gamma\Phi\text{C-2}$ (UFS-2) filter. The two spectra are very similar. These CsI.Tl films are electroluminescent in fields of about 2×10^6 V/cm without breakdown. In thicker films
Card 1/2

S/051/62/012/006/020/020
E039/E420

The excitation of ...

avalanche breakdown occurs with fields of 3×10^5 V/cm. It is suggested that this method can be used to excite electroluminescence in any of the alkali-halides; this would lead to the necessity of preparing thicker layers and using larger fields, hence increasing the experimental difficulties. There is 1 figure. ✓

SUBMITTED: January 29, 1962

Card 2/2

27 310
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12194
S/051/52/013/004/009/023
E039/2491

AUTHORS: Georgobiani, A.N., L'vova, Ye.Yu., Fok, M.V.

TITLE: Absorption of energy in electroluminescence

PERIODICAL: Optika i spektroskopiya, v.13, no.4, 1962, 564-568

TEXT: Measurements are made of the energy absorbed from the electric field applied to an electroluminescent condenser when a sinusoidal exciting voltage is used. These measurements are of importance in the study of processes occurring in luminescent materials and are of practical value in determining the usefulness of luminescent materials as light sources. The current waveform produced by the applied sinusoidal voltage is markedly non-sinusoidal. Instantaneous and average values of the power absorbed are obtained by means of a galvanometer oscillograph method and the average values are compared with values obtained by means of bridge measurements. The accuracy of relative power measurements using the oscillograph is 5% and for absolute values 12%. The minimum value of power measured is 0.008 mW for 50 V applied and the maximum is 100 mW for 1000 V applied. The power waveform is also nonsinusoidal and the nonlinearity increases with
Card 1/2

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Absorption of energy ...

S/051/62/013/004/009/023
E039/E491

increasing voltage. The ZnS-Cu,Al as well as the ZnS-Cu from two other sources used all contained chlorine and were in layers 0.03 to 0.04 mm thick. Measurements were made at room temperature using a 50 cycle voltage supply. A QDY 19 (FEU 19) photomultiplier calibrated against a thermopile was used for measuring luminescent energy yields giving a relative accuracy of 6% and an absolute accuracy of 30%. As the voltage is increased, the electroluminescence yield passes through a maximum ~1% of the absorbed power for voltages of 200 to 275 V, comparable for all the phosphors. The bridge method gives a value of the yield some 25% lower than that determined by the oscillograph method. Maximum light efficiencies are 8 to 9 lumens/watt. The results are compared with theory and good agreement obtained. There are 4 figures. J

SUBMITTED: July 21, 1961

Card 2/2

ACCESSION NR: AT4001249

8/2504/63/023/000/0003/0063

AUTHOR: Georgobiani, A. N.

TITLE: Electroluminescence of crystals

SOURCE: AN SSSR. Fizicheskiy institut. Trudy*, v. 23, 1963, 3-63

TOPIC TAGS: electroluminescence, luminescence, crystal electroluminescence, electroluminescent crystal, zinc sulfide electroluminescence, electroluminescence excitation, electroluminescence capacitor, luminescent material, electrophosphor, phosphor

ABSTRACT: This review article deals first with general problems of electroluminescence of crystals, such as ionization by an electric field, impact ionization, the concentration of the electric field occurring during luminescence, and a classification of electroluminescent materials. Electroluminescence of zinc sulfide and its use as a luminorescent material is then described. Electroluminescence was excited

Card 1/3

ACCESSION NR: AT4001249

in capacitors with dielectric of pressed ZnS-Cu, Al (Cu = 5×10^{-4} 10^{-3} and Al 10^{-4} 2×10^{-3} g-atom/g-mole) and the main brightness peaks identified. The temperature dependence of the critical voltage of the principal peaks of the brightness waves is discussed, along with the dependence of the maximum principal peak on the frequency and amplitude of the exciting voltage. The constant component and the average brightness of the luminescence are calculated. Various theories of the mechanism of excitation of electroluminescence are discussed. The energy absorption during luminescence is estimated and the energy yield of electroluminescence calculated. It is emphasized in the conclusion that although tests with single crystals will cast more light on electroluminescence, the information obtained in such tests is not directly applicable to powdered luminors. "I consider it my duty to thank M. V. Fok for reading the manuscript and for valuable remarks." Orig. art. has: 72 formulas, 38 figures, and 1 table.

Card 2/3

ACCESSION NR: AT4001249

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva AN SSSR (Physics Institute, AN SSSR)

SUBMITTED: 00

DATE ACQ: 30Nov63

ENCL: 00

SUB CODE: PE

NO REF SOV: 054

OTHER: 072

Card 3/3

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INT(1)/RDS AFPTC/ASD/SSD

ACCESSION NR: AP3003410

S/0051/63/C15/001/0095/0099

AUTHOR: Georgobiani, A.Y.; L'vova, Ye.Yu.; Fok, M.V.

TITLE: Temperature dependence of the electroluminescence yield

53

SOURCE: Optika i spektroskopiya, v.15, no.1, 1963, 95-99²

TOPIC TAGS: electroluminescence, ZnS-Cu-Al phosphor

ABSTRACT: Earlier the authors (Optika i spektroskopiya, 13, 1164, 1962 and Ibid., 9, 775, 1960) investigated the voltage dependence of the electroluminescence yield of ZnS:Cu:Al phosphor filled capacitors. In the present work, using the same experimental technique (described in the first reference) they investigated the temperature dependence and the voltage dependences at different temperatures of the electroluminescence of the same phosphors. The phonon mechanism is considered. Curves for the energy absorbed by the phosphor-filled capacitor as a function of the voltage for $T = 114^{\circ}\text{K}$ and 400°K are given; as are plots of the electroluminescence yield versus voltage at 114, 294 and 399°K , and absorbed energy, electroluminescence brightness and yield as a function of the temperature (see Enclosure 1). The authors arrive at the following empirical formula for the brightness:

Card 1/2

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ACCESSION NR: AF8903416

$$B(T) = B_0(T) \cdot \frac{1}{\sqrt{V}}$$

0

where T is the temperature, V is the voltage and b_1 is a coefficient. The general conclusion is that the electroluminescent cell is a rather complicated electric system and that consequently a more precise model is necessary to obtain better agreement between theory and experiment. Orig.art.has: 8 formulas, 1 table and 4 figures.

ASSOCIATION: none

SUBMITTED: 26Jul62

DATE ACQ: 30Jul63

ENCL: 01

SUB CODE: PH

NO REF SOV: 006

OTHER: 000

Card 2/12

17780-63 WWT(1)/BDS AFTC/ASD/ESD-3/IJP(O)/SSD

ACCESSION NR: AP3005852

S/OJ51/63/O15/002/0286/0268

AUTHOR: Georgobiani, A.N.; L'yova, Ye.Yu.; Fok, M.V. 5.8

TITLE: Relation between the phases of the current, power absorbed and brightness in electroluminescence

SOURCE: Optika i spektroskopiya, v.15, no.2, 1963, 266-268

TOPIC TAGS: electroluminescence, brightness wave, luminescent capacitor

ABSTRACT: The authors investigated the same electro luminescent capacitors as earlier (A.N. Georgobiani and M.V. Fok, Opt. i spektro., 9, 175, 1960) using a circuit with and without a compensating capacitance. The luminescence was excited by a 50 cps sinusoidal voltage V at room temperature. A loop oscillograph was used to record the instantaneous values of V , the current I , the power W absorbed by the capacitor, and the brightness D of the emitted electro luminescence. A typical group of oscillograms is shown in the Enclosure. Analysis of the oscillograms recorded under different conditions (mainly changes in compensating capacitance altering the

From the phases or instants of the crest values of V , W and B can be explained

Card 1/3

L 17780-63

ACCESSION NR: AP9005852

satisfactorily with the aid of the concepts regarding the kinetics of electroluminescence proposed in earlier papers by the authors (above reference, A.N. Georgobiani and M.V. Fok. Optika i spektro., 11, 93, 1961, and A.N. Georgobiani, Ye. Yu. L'vova and M.V. Fok, Ibid., 13, 584, 1962): electrons are released primarily in the regions of maximum field, which are located in the immediate proximity of the electrodes; electroluminescence appears when these electrons arrive in the region of high concentration of ionized centers. In line with these concepts the brightness must attain its peak value before the current does, which is borne out by the experimental curves. Orig. art. has 3 formulas and 3 figures.

ASSOCIATION: none

SUBMITTED: 18Jan68

DATE ACQ: 06Sep63

ENCL: 01

SUB CODE: PH

NO REF SOV: 003

OTHER: 000

ACCESSION NR: AP4026361

Z/0055/64/014/003/0167/0175

AUTHOR: Georgobiani, A. N.

TITLE: Electroluminescence of zinc sulfide

SOURCE: Chekhoslovatskiy fizicheskiy zhurnal, v. 14, no. 3, 1964, 167-175

TOPIC TAGS: electroluminescence, zinc sulfide, zinc sulfide luminescence, luminophore, ZnS-Cu luminophore

ABSTRACT: The electroluminophore ZnS-Cu, Al with a copper concentration of 5×10^{-4} to 10^{-3} gram-atom/gram molecule and aluminum concentration of 10^{-4} to 2×10^{-3} gram-atom/gram molecule was investigated. Two types of electroluminescent capacitors were produced from the powders. They differed in the form of the dielectric. Since the luminophore in the electroluminescent capacitor was blended with a dielectric, an alternating current voltage of sinusoidal and trapezoidal form was used. The trapezoidal voltage was shaped by an amplitude limiting block with "trimming" of the sinusoidal voltage. Author measured the absolute energy yield and its dependence upon voltage in a previous work (A. N. Georgobiani, Yu. Yu. L'vova and M. V. Fok, Optika i spektroskopiya 13 (1962, 564). The bridge method gives understated

Card 1/2

ACCESSION NR: AP4026361

values for the energy yield in comparison with the oscillographic. The maximum value for the energy yield measured by the author was $q = 1.3\%$, which, for green light, corresponds to a luminous efficiency of about 7 lm/w. Agreement of theory with experiment will evidently be better if it is to be assumed that the holes can withdraw from the luminescence centers under the action of the field. Inasmuch as the mechanism of their liberation is unknown, such a computation was not carried out. It is also certain that the granulometric composition of the luminophore exerts some effect on the measurement results. Orig. art. has: 3 figures and 6 equations.

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva AN BSSR (Physics Institute, AN SSSR)

SUBMITTED: 11Jul62

DATE ACQ: 15Apr64

ENCL: 00

SUB CODE: 0P,00

NO REF SOV: 011

OTHER: 006

Card 2/2

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

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

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

I 26360 56 EWT(l)/EWT(m)/T/EWP(t) IJP(c) JD

ACC NO AP6012501 SOURCE CODE: UR/0181/66/008/004/1273/1275

AUTHOR: Bochkov, Yu. V.; Georgobiani, A. N.; Chilaya, G. S.

ORG: Physics Institute im. P. N. Lebedev AN SSSR, Moscow (Fizicheskiy institut AN SSSR)

TITLE: Some electrical characteristics of zinc sulfide single crystals

SOURCE: Fizika tverdogo tela, v. 8, no. 4, 1966, 1273-1275

TOPIC TAGS: zinc sulfide, single crystal, electric property, crystal anisotropy

ABSTRACT: The authors study the electrical characteristics of large ZnS single crystals grown from the melt at 850°C under inert gas pressure by a new method developed under the direction of L. A. Sysoyev. These are hexagonal crystals with no traces of cubic structure so that contact and surface phenomena have no effect on the electrical measurements. The specimens studied had dimensions of 4 x 48 mm. The temperature curve for electrical conductivity is approximated by two straight lines in $\ln \sigma$ and $1/T$ coordinates. The slope of the low-temperature line corresponds to an activation energy of 1.25 ± 0.07 eV, while the high-temperature section corresponds to an energy of 1.5 ± 0.06 eV. This section may probably be attributed to natural conductivity since data in the literature give the thermal width of the forbidden band as 3.2 ± 0.2 eV. Extrapolation of the low-temperature section to room temperature gives

Card 1/2

L 26360-66

ACC NR: AP6012501

an estimated resistivity of $\sim 10^{20}$ $\Omega \cdot \text{cm}$. The degree of compensation was calculated at 10^{-2} . It was found that the electrical conductivity parallel to axis C_6 was no more than 2-3 times as great as that perpendicular to this axis. Photoconductive anisotropy was found to be 1.5. This contradicts the work of Limpicki et al. (A. Limpicki, P. R. Frankl, V. A. Brophy, *Phys. Rev.*, 107, 1238, 1957). In conclusion we thank M. V. Fok for discussing the results, L. A. Sysoyev for furnishing the zinc sulfide crystals and V. K. Kostin for assistance in preparation of the specimens. Orig. art. has: 1 figure.

SUB CODE: 20/

SUBM DATE: 05Aug65/

ORIG REF: 004/

- OTH REF: 011

Card 2/2

L 39773-66 SWI(m)/EMP(t) JJP(c) JD/GD-2
ACC NR:AP6013068

SOURCE CODE: UR/0048/66/030/004/0628/0632

AUTHOR: Bochkov, Yu.V.; Georgobiani, A.N.; Kisil', I.I.; Bysoyev, L.A.; Chilaya, G.S. 19
E

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

TITLE: Electroluminescence of bulk ZnS crystals [Report, Fourteenth Conference on Luminescence held in Riga, 16-23 September 1965]

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v. 30, no. 4, 1966, 628-632

TOPIC TAGS: electroluminescence, zinc sulfide, *semiconducting material, luminophor, single crystal, single crystal growth*

ABSTRACT: The study was undertaken in view of the growing interest in II-VI semiconductors as representatives of the class of compounds with a broad forbidden band. Zinc sulfide belongs in this category and is the most thoroughly studied electroluminophor. However, most previous investigations of this electroluminophor did not satisfy the basic conditions for electric measurements on semiconductors: absence of surface effects and adequate uniformity of the specimens. For the present work the single crystals were grown from a melt in an inert gas by the Stockbarger technique; the crystallization was realized at 1850° C to insure growth of hexagonal specimens. A characteristic of the single crystals was pronounced cleavage along the (1120) planes; the single crystals were up to 30 mm in diameter and 100 mm long. Chemical analysis

Card 1/2

L 39773-66

ACC NR: AP6013068

showed that the crystals contained the following impurities: Cu about $10^{-4}\%$, Ni about $5 \times 10^{-6}\%$, Fe about $10^{-4}\%$, Mn about $5 \times 10^{-6}\%$, SO_4^{2-} under $10^{-4}\%$, and oxides under $10^{-4}\%$. The specimen plates were prepared as follows: the crystals were first oriented with reference to the cleavage plane and then wafers measuring 3 x 3 mm and 2 mm thick were cut by means of a corundum disk. The wafers were etched in acid and provided with ohmic contacts to eliminate surface effects. In the experiments measures were taken to minimize heating; these consisted in providing good heat conduction and using short exciting pulses (1.7 microsec) and a very low duty factor. The electroluminescence peaks at about 460 m μ ; the brightness is a linear function of the applied voltage. Further data are given on the ultraviolet electroluminescence spectrum of purer crystals. The experimental results are discussed in general terms; the emission is attributed to interband recombination. In conclusion, we desire to thank M.V.Fok for discussion of the results and valuable suggestions in the course of the work, V.K.Kostin for assistance in preparing the crystals, and A.N.Savin and G.G.Stolpovskiy for help in adjusting the electronic equipment. Orig. art. has: 4 figures.

SUB CODE: 20/

SUBM DATE: 00/

ORIG REF: 003/

OTH REF: 004

Card

2/2/72

L 15929-66

ACC NR: AP5004423

SOURCE CODE: UF/0051/66/020/001/0183/0184

AUTHOR: Bochkov, Yu. V.; Georgobiani, A. N.; Gershun, A. S.; Sysoyev, L. A.;
Chilaya, G. S.

ORG: none

42
B

TITLE: Ultraviolet electroluminescence of zinc sulfide

SOURCE: Optika i spektroskopiya, v. 20, no. 1, 1966, 183-184

TOPIC TAGS: electroluminescence, zinc sulfide, single crystal, UV radiation

ABSTRACT: Ultraviolet electroluminescence was observed in pure single crystals of zinc sulfide grown from a melt under inert gas pressure. Specimens 150 μ thick were subjected to pulsed voltage with an amplitude of 4.5 kv, a duration of 1.7 μ sec and a duty factor of $1.5 \cdot 10^{-4}$. The voltage was applied through indium electrodes. The luminescence of the specimens is stable at a constant voltage and increases approximately exponentially with voltage. A voltage increase from 2.7 to 4.5 kv increases the luminescence intensity by approximately one order of magnitude. It is assumed that this luminescence is due to recombination of electron-hole pairs created by

Card 1/2

UDC: 535.376-3

2

L 15929-66

ACC NR: AP6004428

electric discharge in the crystal. There is a sharp cutoff in luminescence at 330 mμ due to the natural absorption of the crystal lattice. It is shown that this emission could not be caused by air breakdown in microcracks. Orig. art. has: 1 figure.

SUB CODE: 20/ SUBM DATE: 27Jul65/ ORIG REF: 001/ OTH REF: 000

Card 2/2

ACC NR: AP7004148

SOURCE CODE: UR/0051/67/022/001/0167/0168

AUTHOR: Georgobiani, A. N.; Steblin, V. I.

ORG: none

TITLE: Electroluminescent p-n junction made of zinc sulfide

SOURCE: Optika i spektroskopiya, v. 22, no. 1, 1967, 167-168

TOPIC TAGS: semiconductor material, semiconductor device, pn junction, ZINC SULFIDE,
ELECTROLUMINESCENCE

ABSTRACT:

The fabrication of zinc sulfide p-n junctions by thermal diffusion of Cu at 650C in single-crystal ZnS-Cl is reported. The electroluminescence of these p-n junctions can be maintained when voltages are applied in direct and reverse directions. The dependence of luminescence brightness on voltage is shown in Fig. 1 in semilogarithmic scale. If the p-n junction is connected directly, the luminescence appears at 2.2 volts. In this case intensity of luminescence is proportional to the current passing through the investigated specimen. This demonstrates the injection character of such luminescence. If the junction is connected in reverse direction, luminescence first appears at 18 volts, probably because of the breakdown of the p-n junction. Orig. art. has: 1 figure. [GS]

Cord 1/2

UDC: 535.376

ACC NR: AP7004148

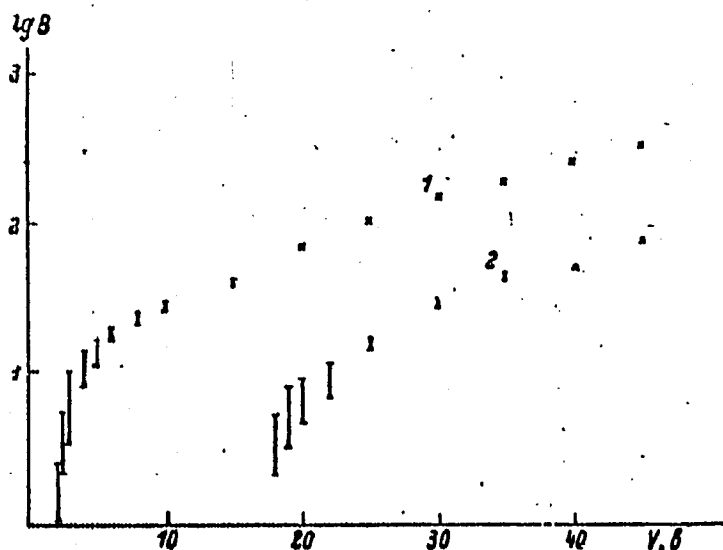


Fig. 1. Dependence of luminescence intensity on voltage in the zinc-sulfide p-n junction

1 - Direct direction; 2 - reverse direction.

Card 2/2 SUB CODE: 09/ SUBM DATE: 20Jun66/ OTH REF: 003/ . ATD PRESS: 5115

GEORGOBIANI, A.N.; GOLUBEVA, N.P.; LEBEEV, P.N.

Excitation of electroluminescence in alkali halide compounds.
Chekhosl fiz zhurnal 13 no.2:91-93 '63.

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

GEORGOBIANI, A.N.; L'VOVA, Ye.Yu.; FOK, M.V.

Energy absorption in electroluminescence. Opt. i spektr.
13 no.4:564-568 0 '62. (MIRA 16:3)
(Luminescence)

GEORGIANE, D.A.

Use of the methods of statistical decision functions in determining the optimum parameters in a certain control problem. Soob. AN Gruz. SSR 35 no.1:23-28 J1 '64.

(MIRA 17:10)

1. Vychislitel'nyy tsentr AN GruzSSR. Predstavleno chlenom-korrespondentom AN GruzSSR I.P. Gokiyeli.

GEORGHIANI, D.A.

Proof of the existence and uniqueness of stationary ϵ -periodic
distribution in a problem of the control of systems. Izv. AN
Gruz. SSR 34 no.3:535-540 Je '64 (MIRA 18:1)

1. Vychislitel'nyy tsentr AN Gruzinskoy SSR. Submitted October 2,
1963.

GEORGOBIANI, D.A.

Basis for a limiting process in the theory of storage. Trudy
Vych. tsentr. AN Gruz. SSR 5:33-45 '65. (MIRA 18:9)

33787
S/120/62/000/001/052/061
E192/E582

24.6800

AUTHOR: Georgobiani, T.P.

TITLE: Temperature stabilizer for the effusion camera of the ion source of mass spectrometers

PERIODICAL: Prihory i tekhnika eksperimenta, no. 1, 1962, 133 - 136

TEXT: Temperature stabilization of the effusion camera during measurement of the intensity of ion currents in a mass spectrometer is of considerable importance since it determines the accuracy of the measurement. A stabilizer for the camera was designed and this is described in some detail. In this system the temperature of the effusion camera is measured by a platinum-platinum-rhodium thermocouple by the potentiometer method. The voltage which balances the emf of the thermocouple is taken from the potentiometer ППТН-1 (PPTN-1). The automatic recording potentiometer ЭПП-09 (EPP-09), having a sensitivity of 10 μ V/division is used as the null indicator; the sensitivity of the potentiometer permits the recording of the temperature changes of the camera of less than ± 0.5 $^{\circ}$ C. Temperature
Card 1/B

Temperature stabilizer

S/120/62/000/001/032/061
E192/E382

stabilization is achieved in the following manner. The difference ΔU between the voltage of the potentiometer PPTN-1 and the emf of the thermocouple (a deviation signal), which is produced by the temperature change in the camera, is converted into an AC signal by means of a vibrator; the signal is applied to an amplifier by means of an input transformer. After amplification the deviation signal is applied to a magnetic amplifier which controls the heater circuit of the camera; the amplifier increases or reduces the heater current, depending on the polarity of the deviation and changes the temperature of the camera in such a way that the deviation is compensated. The deviation-signal amplifier is illustrated in Fig. 2. It is seen that the amplifier consists of two AC stages based on a double triode, a parallel detector (the diode section of the diode-pentode) and a DC amplifier based on the pentode and the output triode which feeds into the magnetic amplifier. The gain of the system without the magnetic amplifier is 2×10^5 . The

Card 2/4

Temperature stabilizer

S/120/62/000/001/052/061
E192/E383

stabilizer covers the temperature range from 400 - 1 200 °C and was used in the investigations of P.A. Akishin, L.N. Gorokhov and L.N. Sidorov (Ref. 4 - Dokl. AN SSSR, 1960, 155, 113) and P.A. Akishin, Yu.S. Khodeyev (Ref. 5 - Zh. fiz. khimii, 1961, 35, 1169). The stabilizer was also employed with a double-effusion camera. There are 4 figures.

ASSOCIATION: Khimicheskiy fakul'tet NGU
(Chemistry Division of NGU)

SUBMITTED: June 26, 1961

X

Card 3/4

1135-66 EWT(m)/EWP(t)/EWP(b)/EWA(h) ID

ACCESSION NR: AP5016391

UR/0120/65/0010/003/0163/0166
621.384.8

31
30
B

AUTHOR: Georgobiani, T. P.

TITLE: Recording the a-c ionic current in mass-spectroscopic investigations

SOURCE: Pribury 1 tekhnika eksperimenta, no. 3, 1965, 163-165

TOPIC TAGS: mass spectroscopy

ABSTRACT: A selective amplifier with a phase-sensitive detector is described which is intended for recording a-c component of ionic current in a mass spectrometer. The amplifier was tested with an MS-3 two-beam mass spectrometer in measuring the ionization curves of low-volatility substances by the method of retarding potential which uses quasi-monoenergetic electrons; the time saving in measuring such curves proved to be up to 95%. The zero-point instability reduced to the amplifier input was $\pm 1.5 \times 10^{-15}$ amp. "In conclusion, the author wishes to thank N. I. Starkovskiy for his help in aligning the amplifier and the Mass-Spectrometry Group for its constant interest in the work." Orig. art. has; 3 figures.

Card 1/2

L 1135-66

ACCESSION NR: AP5016391

ASSOCIATION: Moskovskiy gosudarstvenny universitet (Moscow State University)

SUBMITTED: 04 Apr 64

ENCL: 00

SUB CODE: GP

NO REF SOV: 004

OTHER: 002

Card 2/2

90

14075-01, RLV, 150-88010, T.R.

Investigating the process of one-substrate reaction of wool
bonded to woolen and worsted looms. Tekst. prom. 24 noyabr
1964. N 16. (Sov. 17 12)

1. Nauchnyy obozr. dinamiki mekhanizmov i mashin Nauchno-
issledovatskiy institut tekstil'noy i legkoy promyshlennosti,
nast. izdaniye (for Sadzhaya). 2. Vvedeniye v izucheniye
dinamiki mekhanizmov i mashin Nauchno-issledovatskiy
institut tekstil'noy i legkoy promyshlennosti, 1964
(for Georkhalidze).

RUSESKU, Al'fred [Rusescu, A.], prof.; DZHEORMANYANU, Mirchya [Geormanianu, M.], kand.med.nauk

Significance of pneumodiastinography in primary tuberculosis in children. Vest. rent. i rad. 35 no. 6:14-16 N-D '60.
(MIRA 14:2)

1. Iz 1-y pediatricheskoy kliniki, Bukharest.
(TUBERCULOSIS) (PNEUMOMEDIASTINUM)

RUSESCU, A., prof.; MAJORESCU, M., dr.; GEORMANEANU, M., dr.; POPESCU, V., dr.

Relations between the Wissler-Fanconi syndrome and chronic polyarthriti in child an (Still's diseases, chronic evolutive polyarthriti). Med. intern. 13 no.12:1609-1615 D '61.

1. Lucrare efectuata in Clinica I de pediatrie "Emilia Irza", Bucuresti.

(ARTHRITIS, RHEUMATOID in inf. & childh.)
(RHEUMATIC FEVER)

GEORG OBIANI, N.I.

CHKHAIDZE, Sh.M.; GEORGEBIANI, N.I.

Spectroheliographic observations made on Mount Kazbili in 1941-1944.
Bul. Abast. astrofis. obser. no. 15:169-260 '53. (MLRA 7:10)
(Sun)

GEORGIANI, G. M.

Spectroheliographic Observations on the Mount Janobi I in the Years 1941-1944.
Byull. AN Georgia SSR, No 13, 1953, 176-260.

Results of systematic observation of bright faculae, filaments, and prominences
in H alpha light are published. These observations were carried out by G. Shkaidze,
N. Georgiani, T. Kochlashvili, K. Chuvayev, D. Khitarishvili. (IzVest, No 2, 1954)

SO: W-31128, 11 Jan 55

GEORGOBIANI, T. A.

Georgobiani, T. A. and Prokopenko, A. I. "The protection fo citrus fruit", Byulleten' Vsesoyuz. nauch. -issled. in-ta dhaya i subtrop. kul'tur, 1948, No. 3, p. 53-63, -Bibliog: p. 62-63

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

GEORGEBIANI, T.D.

USSR/Human and Animal Physiology (Normal and Pathological).
Intestine.

T-6

Abs Jour : Ref Zhur - Biol., No 16, 1958, 74887

Author : Dzidzigiuri, T.D., Georgobiani, T.D.

Inst : -

Title : Some Data on the Motor Activity of the Small Intestine.

Orig Pub : Fiziol. zh. SSSR, 1957, 43, No 2, 164-168

Abstract : In dogs the loop of the small intestine (LSI) was taken out into a skin flap for a length of 10-15 cm and a fistula tube was placed into it. Movement of the stomach (S) and LSI were registered by balloons, as well as by oncograph, in which the skin flap with LSI were placed. Hunger period movements in the LSI were continued 15-30 minutes, periods of dormancy - 1-2 hours. Between the movements of the S and LSI full parallism was noted. Periods of movements of LSI coincided with periods of secretion of intestinal juice. Weak inflation of the

Card 1/2

*Let. Cortico-Visceral pathology
Inet. Physiology in I. P. Pavlov*

USSR/Human and Animal Physiology (Normal and Pathological).
Intestine.

T-6

Abs Jour : Ref Zhur - Biol., No 16, 1958, 74887

balloon caused a constriction of the musculature only of that section of LSI where it was found independent of the periodic activity. With the increase of the inflation, movements were spread to the neighboring sections, and with very strong increases of pressure the movements were stopped. During stimulation of the mechano-receptors of S contractions set in at the beginning in the S and in a while in LSI. By means of the "balloon" method periodic motor activity of the intestine cannot be studied since the balloon itself, being a stimulator, changes it. -- V.A. Shaternikov.

Card 2/2

- 75 -

SECRET, Wagon IV.

Radar. What is radar? Its history, construction and use. Captain D. Collins-irv 1947
47 p. (45-20106)

TK(575.34

WELSH, B.

Loss in the process of pick-freezing for...
WOSPOWITZ, M., Warszawa, Vol. 7, no. 3, p. 110.

SD: Monthly List of East European accessions, (1955), 10, Vol. 1, no. 1, Oct. 1955,
101.

GEORMANEANU, D., dr.; TEODORESCU, A., dr.; DOBRESCU, D.

Considerations on a case of typical nephrocalcinosis. Med. intern.
14 no.12:1515-1517 D '62.

1. Lucrare efectuata in Policlinica de adulti, Craiova.
(NEPHROCALCINOSIS)

RUMANIA

VARTIC, Dr. N.; GEORGEANU, Dr. P.; and NICLEA, M., Veterinary Physician
(Faculty of Veterinary Medicine) (Facultatea de medicina veterinara,) Cluj.

"Treatment of Anthrax Abscesses"

Bucharest, Revista de Zootehnie si Medicina Veterinara, Vol 16, No. 5,
May 66; pp 70-73.

Abstract: [English summary modified]: Direct injection of antibiotics
(streptomycin and penicillin in saline) was found more effective when injected
directly into the abscess cavity than the standard parenteral treatment with
the same drugs in several cases in large domestic animals. 5 Rumanian refer-
ences.

(GEFFERT, Y.) BURDUMOVSKIY, A.

Lumber - Standards

Method of planning lumbering operations. Les. prom. 12 no. 9, 1952.

9. Monthly List of Russian Accessions, Library of Congress, December ¹⁹⁵²~~1953~~, Uncl.

~~V. GARDNER~~ A. DUNDONCKY

"Methods of production planning." p. 65. (POLANA, Vol. 9, no. 3, Mar. 1953, Praha, Czechoslovakia.)

SO: Monthly List of East European Accessions, L.S., Vol. 2 No. 7, July 1953, Uncl.

... of caffeine, theophylline, and theobromine.
 R. Gerner and L. Kirgo (L'vor State Med. Inst.). *J. Pharm. Med. (Lond.)* (U.S.S.R.) 16, 179-80 (1946). $\text{C}_8\text{H}_{10}\text{N}_2\text{O}_4$ (126 g.) and 120 g. ice, treated with 80 cc. 40% NaOH at 15-20°, yielded a weakly alk. (to phenolphthalein) soln. which, when treated with 12.5 g. NaCN in 62.5 cc. water and, after subsidence of the heat evolution, with 12.5 g. NaCN in 62.5 cc. water at 85-5°, evapd. in *vacuo* to 20 cc., filtered, and evapd. to a thick sirup, frage to a grainy mass. On drying at 100° the resulting Na cyanurate (I) was suitable for further reactions although it contained about 15% NaCl. Concd. H_2SO_4 (250 cc.) was cooled to -20°, treated with urea nitrate (100 g.), keeping the temp. below 0°, then stirred for 0.5 hr. at 3°; the mixt. poured onto 500 cc. cracked ice yielded 80% nitrocarbamide (II). II (75.2 g.), washed with a little ice water and air-dried, was treated in 400 cc. water with 44.2 g. MeNH_2Cl , followed by dropwise addn. of 24 g. NaOH in 125 cc. H_2O during 45 min. The soln. was warmed to 45°, when N_2O evolution began, and, after careful elevation of the temp. to 80°, the reaction mixt. was evapd. to a sirup in *vacuo* and treated with 60 g. 1:4 HNO_3 to yield 85.3% tech. monomethylcarbamide nitrate (monomethylurea nitrate) contg. about 18% NaCl. Well-dried I (21.6 g.) was mixed with dried tech. monomethylcarbamide (28 g.) and treated with 25 g. Ac_2O with stirring; after 2 hrs. the mixt., warmed to 70-5° for 2 hrs., treated with 50 cc. H_2O , and filtered, yielded 17 g. 1-cyanatoethyl-3-methylcarbamide (III), m. 242.5° (crude). Treatment of 15 g. III with 45 cc. 20% NaOH gave a soln. which solidified on self-heating, and liquefied on stirring, only to solidify again to Na 4-amino-3-methylbarbiturate, a soln. of this in 65 cc. water was acidified with AcOH to yield close to 100% 3-methyl-4-aminobarbituric acid (IV). IV (14.0 g.) and 50 g. 10% NaOH heated till soln. occurred were treated with 14.4 g. Me_2SO , with shaking, to yield 14 g. 1,3-dimethyl-4-aminobarbituric acid, this, in 80 cc. H_2O , warmed until soln. occurred, treated with 7 g. NaNO₂, followed by slow addn. of 20 g. 40% AcOH , then allowed to stand for 12 hrs., gave 15 g. 1,3-dimethyl-4-aminomodure acid (V). V (12 g.), 0.4 g. Zn dust, and 120 cc. 40% HCO_2H (in a Kjeldahl flask) were heated on a water bath for 1.5 hrs. after subsidence of the initial spontaneous reaction; on cooling, the Zn formate was filtered off and the filtrate evapd. in *vacuo* to yield 12% pale yellow 1,3-dimethyl-5-amino-5-hexamidouracil (VI), m. 250.8°, 5 g. in 50 cc. hot water treated with stirring with 4 cc. 40% NaOH, heated for 10 min., and treated with 4 cc. 40% NaOH, yielded the Na salt of threophylline, which, on decompn. with 50% AcOH , gave 92.5% theophylline, m. 265.7° (from water). VI (5 g.) in 11.4 g. 10% NaOH heated to 60° for 20 min. and the solid thus formed treated with 3.8 g. Me_2SO , with shaking, followed by heating for 1 hr., yielded, on cooling, 97% caffeine, m. 235° (from water or EtOH). From 7 g. IV in 200 cc. water heated to reflux, treated with 4 g. NaNO₂ and 7 g. 50% AcOH , and let stand for 12 hrs., almost 100% 1-methyl-4-aminomodure acid resulted; this, 10 g., 8 g. Zn dust, and 11.4 g. 40% HCO_2H were heated on a steam bath with shaking for 2 hrs. until colorless, then heated for 8 hrs. longer, filtered hot, washed with hot HCO_2H , and evapd. to dryness in *vacuo* to yield 87.0% 1-methyl-5-amino-5-hexamidouracil (5 g.), treated with 0.8 g. 20% NaOH, heated on a water bath for 0.5 hr., cooled, the mass treated with 6.4 g. Me_2SO , during 1.5 hrs., and filtered, yielded 61.4% threobromine, crystal. from water after charcoal treatment. C. M. Kosolapoff

ACC NR: AR6035063 SOURCE CODE: UR/0282/66/000/008/0002/0003

AUTHOR: Gepner, I. L.

TITLE: Construction materials for chemical equipment operating at high temperatures and pressures

SOURCE: Ref. zh. Khimicheskoye i kholodil'noye mashinstroyeniye, Abs. 8.47.13

REF SOURCE: KhISA. 2-y Mezhdunar. kongr. khim inzh. tekhn. khim. oborud. i avtomat., Marianske Lazne, 1965 g. S. 1., 1965, Ye 3.1

TOPIC TAGS: chemical equipment, heat resistance, construction material

ABSTRACT: Materials used in the chemical industry can be divided in two groups: 1) nickel-aluminum-titanium-base alloys with a chromium addition for increased heat resistance, and alloys with additions of zirconium, tungsten, and tantalum for the manufacture of special equipment, and 2) materials with aluminosilicate fibers, reinforced plastics, and metals. Of interest are materials with a silicate fiber base and an aluminum binder. [Translation of abstract] [NT]

SUB CODE: 11/

Card 1/1

UDC: 66.02.002.3

S GARDNER J.

Properties & State

Austenitic Cast Iron. J. Wojcik, J. Giguier, and H. Pachowski. (*Przeład Odlewnictwa*, 1951, 1, Nov., 311-317). [In Polish]. The general characteristics of austenitic cast iron, the technology of its manufacture, its structure, mechanical properties, machinability, and resistance to high temperatures are described. - v. o.

GEPNER-WOZNIEMSKA, Maria (Warszawa, Chocimska 5, Instytut Hematologii)

Catalase activity of erythrocytes in blood diseases. Polskie arch. med.
wewn. 27 no.9:1183-1196 1957.

I. Z Klinicznego Oddziału Chorob Wewnętrznych i Pracowni Biochemii
Klinicznej Kierownik: doc. dr med. M. Kowalski. Instytutu Hematologii
Dyrektor: doc. dr. med. A. Trojanowski.

(CATALASE, in blood,
erythrocytes, in various blood dis. (Pol))

(BLOOD DISEASES,
erythrocyte catalase activity in (Pol))

GEPNER-WOZNIEWSKA, Maria

Activity of glutamic-oxaloacetic transaminase of the erythrocytes and plasma of preserved blood. Pol. arch. med. wewn. 32 no.10:1213-1218 '62.

1. Z Oddziału Chorob Wewnętrznych Instytutu Hematologii Kierownik:
dr med. S. Pawełski Dyrektor: doc. dr med. A. Trojanowski.
(ASPARTATE AMINOTRANSFERASE) (ERYTHROCYTES)
(BLOOD PRESERVATION)

GEPNER-WOZNIEWSKA, Maria; TRACZYK, Zdzislaw

Activity of glutamic-exalic-acetic transaminase in the erythrocytes and serum in blood diseases. Increase of the activity of glutamic-exalic-acetic transaminase in the erythrocytes in hemolytic syndromes. Polski tygod. lek. 14 no.32:1473-1479 10 Aug 59.

1. (Z Klinicznego Oddzialu Chorob Wewnetrznych i Pracowni Biochemii Klinicznej: kierownik - doc. dr med. E. Kowalski, Instytutu Hematologii, dyrektor - doc. dr med. A. Trojanowski)
(BLOOD DISEASES, metab.) (TRANSAMINASES, blood)

GEPNER-WOZNIIEWSKA, Maria; LEWICKA, Teresa; AFEK-KAMIŃSKA, Maria

Aplasia of the erythroblastic system co-existing with a benign tumor of the thymus. Pol. arch. med. wewn. 34 no.3:367-372 '64

1. Z Oddziału Chorob Wewnętrznych Instytutu Hematologii w Warszawie (kierownik: doc.dr.med. S.Pawelski) oraz ze Szpitala Zakaznego Nr.1 w Warszawie (Dyrektor: dr.med. A. Krysztof).

*

GEFNER-WOZNIEWSKA, Maria; KACPERSKA, Elzbieta; SOBCHYNSKA-CZELCHOWSKA, Zofia;
PAWELSKI, Sławomir

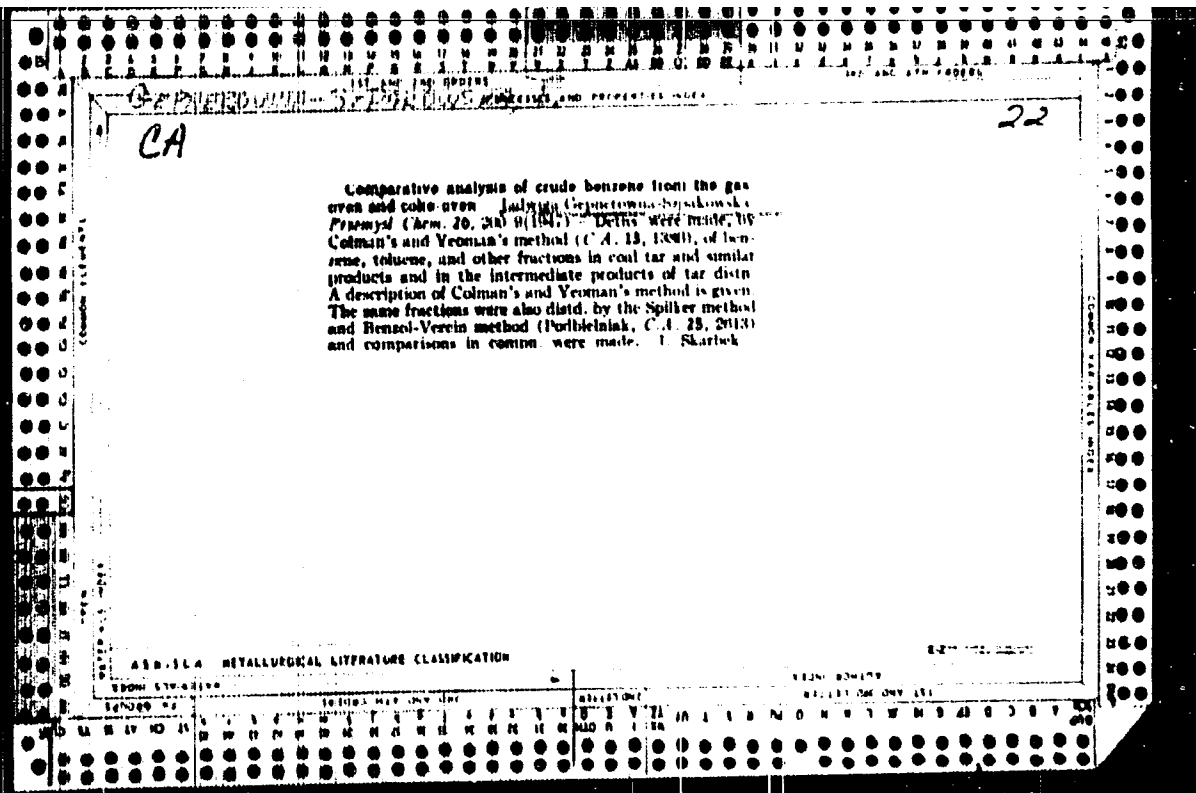
Primary auto-immune hemolytic anemias. Prolonged clinical, hematological and serological observation. Therapeutic results. Pol. arch. med. wewnet. 34 no.8:1065-1072 '64.

1. Z Oddziału Chorob Wewnętrznych Instytutu Hematologii (Kierownik: doc. dr. med. S. Pawelski); z Oddziału Hematologicznego (Kierownik: prof. dr. med. W. Lawkowiec) i z Zakładu Srologii (Kierownik: doc. dr. med. H. Seyfriedowa).

GEPNER-WOZNIEMSKA, Maria

Vitamin B 6 metabolism and its deficiency in man. Pol. tyg. lek.
20 no.10:367-370 8 Mr '65

1. Z Oddziału Chorob Wewnętrznych Instytutu Hematologii (Kierownik: doc. dr. med. S. Pawelski).



BOBISENKO, V.G.; BOZHEK, S.A.; GEPHA, S.A.; ZAYDUM, I.D.; GAMAZOVA, L.B.

Reasons for the increased brittleness of strips of transformer steel. Metallurg 10 no.8:25-27 Ag '64.

(MIRA 17:11)

1. Zavod 'Zaporozhstal'".

LIT-87 EIP(e)/NIP(e)/DII/IMP(k) IIP(e) 02/m

ACC NR: AP0031515

SOURCE CODE: UR/0383/66/000/004/0035/0036

AUTHOR: Raday, V. S. (Candidate of technical sciences); Chekmarev, I. A. (Candidate of technical sciences); Sukonnik, I. M.; Gepp, S. A.; Serbin, I. V.; Yermolov, I. V.; Chish, V. A.; Derbasov, V. I.; Kurilenko, V. Kh.; Kirvalidze, N. S.; Pasternak, N. M.

ORG: none

58

TITLE: Improving the plasticity of Kh18N10T tube steel by vacuum-arc melting

SOURCE: Metallurgicheskaya i gornorudnaya promyshlennost', no. 4, 1966, 35-36

TOPIC TAGS: austenitic steel, plasticity, ~~steel-plasticity-improvement~~, vacuum arc, ~~vacuum arc~~ VACUUM MELTING, METAL TUBE / Kh18N10T STEEL

ABSTRACT: The plasticity of conventionally arc melted and vacuum arc melted Kh18N10T steel was tested by rolling conical specimens in a piercing mill and by torsion tests, both at 1000—1300C. It was found that in piercing, the critical reduction depends primarily upon the α -phase content. Metal with a high α -phase content cannot be easily pierced at a temperature of 1200C or higher regardless of the melting method. The content of impurities and gases is of secondary importance. In torsion tests, plasticity was found to depend mainly upon the metal purity. Inasmuch as vacuum arc melting yields steel of a higher purity, its plasticity is also higher than that of conventionally melted steel. The increase of α -phase con-

Card 1/2

UDC: 669.15—154.621.774.35

L 08947-67

ACC NR: AP6031515

0

tent up to a certain limit does not substantially affect the plasticity of Kh18N10T steel, but an increase over this limit lowers the steel plasticity. Orig. art. has: 2 figures. [ND]

SUB CODE://,13 / SUBM DATE: none/ ORIG REF: 002/

SZYMIK, Franciszek, dr inż.; GEPPART, Andrzej, inż.

Research results on the wind load of the overhead line
conductors in Poland. Energetyka Pol 16 no.12:Suppl.:
" Biul Inst energ 4 no.11/12:44-48 D '62.

1. Zakład Sieci Elektrycznych, Katowice.

DROZDOV, N.G., professor, doktor tekhnicheskikh nauk; PRIVEZENTSEV, V.A., professor, doktor tekhnicheskikh nauk; KOMAROV, N.S., dotsent, kandidat tekhnicheskikh nauk; NIKULIN, N.V., dotsent, kandidat tekhnicheskikh nauk; SHUMSKIY, I.I., dotsent, kandidat tekhnicheskikh nauk; KREMLEVSKIY, P.A., kandidat tekhnicheskikh nauk; GEPH, A.P., inzhener; ALEKSANDROV, N.V., professor, doktor tekhnicheskikh nauk; TARKYEV, B.M., professor, doktor tekhnicheskikh nauk; NYGENSON, L.S., professor, doktor tekhnicheskikh nauk; STEPANOV, V.S., dotsent, kandidat tekhnicheskikh nauk; MAGIDSON, A.O., inzhener.

"Science of electrical materials." M.M.Mikhailov. Reviewed by N.G. Drosdov, and others. Elektrichestvo no.3:93-94 Mr '54. (MLRA 7:4)

1. Moskovskiy energeticheskiy institut im. Molotova. 2. Vsesoyuznyy zaochnyy energeticheskiy institut.
(Electric insulators and insulation) (Electric conductors)

GEPPE, A.P.

105-6-26/26

AUTHOR Eng. A.P. GEPPE, Eng. A.O. MAGIDSON

TITLE G.I. Rabchinskaya. "Radiotechnical Working Materials".
 2. revised edition, 328 pages, price Rb. 7.65, published
 by Gosenergoizdat 1956. Licensed by the Department for
 Instructional Institutes of the Ministry for the Radio
 Industry as a text book for technical schools MRTP.
 (G.I. Rabchinskaya. Radiotekhnicheskiye materialy.
 Vtoroye izdaniye, pererabotannoye. 328 str., ts. 7 rub.
 65 kop. Gosenergoizdat, 1956. Dopushcheno Upravleniyem
 uchebnymi zavedeniyami Ministerstva radiotekhnicheskoy
 promyshlennosti v kachestve uchebnika dlya tekhnikumov
 MRTP.- Russian)

PERIODICAL Elektrichestvo 1957, Nr 6, pp 95-96 (U.S.S.R.)

ABSTRACT The above is a book review. The book consists of the follow-
 ing parts:
 1) Working materials for electric insulation.
 2) Semiconductors.
 3) Conductors.
 4) Magnetic working materials. Besides, 8 laboratory works
 are described.

CARD 1/2

105-6-26/26

G.I. Babchinskaya. "Radiotechnical Working Materials", 2. revised edition, 328 pages, price Rb. 7.65, published by Gosenergoizdat 1956. Licensed by the Department for Instructional Institutes of the Ministry for the Radio Industry as a text book for technical schools MRTP.

The book is widely criticized and all deficiencies are described in detail. They mainly concern the arrangement of the matter dealt with, style and expression, as well as cases of technical inaccuracy and errors.

ASSOCIATION: Moscow Institute for Energy "Molotov" and ALLUNION Institute of Energetics for instruction by Correspondence.

PRESENTED BY: -

SUBMITTED: -

AVAILABLE: Library of Congress.

CARD 2/2

10558-3-15/31

AUTHOR: Gepps, A. P. , Engineer

TITLE: On the Surface Resistance of Dielectric Substances (O poverkhnostnom soprotivlenii dielektrikov)

PERIODICAL: Elektrichestvo, 1958, Nr 3, pp. 60 - 65 (USSR)

ABSTRACT: Although the specific surface resistance ρ_s beside ϵ , ρ_v , $\text{tg } \delta$ and E_{cond} - is one of the five fundamental characteristics of electric properties of dielectric substances, it has hitherto been insufficiently investigated, and the conception of "surface-electroconductivity" has not been defined exactly. Also the physical meaning of the surface electroconductivity $\gamma_s = 1/\rho_s$ is not clear. The fundamental equation $R_s = \rho_s b/l$ is applied without sufficient physical proof. The surface current (leakage current on the surface) represents an important starting point for a theoretical investigation and for the measurement of the value of surface-electric conductivity. In practice the current passing on the one side

Card 1/3

105-58-3-15/31

On the Surface Resistance of Dielectric Substances

of the insulation surface between the electrodes, must be known, and this current is to be taken for the surface current without limiting its domain of passage by a layer of any thickness. It is of importance that such a formulation provides for the necessity to consider the electrode dimensions (width and length) in determining the surface current. Based on this formulation the conception "surface electric conductivity", as electric conductivity of dielectric substances between the electrodes fitted to one and the same side of the surface, can be defined. Then two very different cases are investigated. 1) The electroconductivity of the surface- and interior layers of the material is equal. 2) On the surface of the dielectric substance a layer with an increased conductivity, compared with the interior domain, is present. - The equation (2) is derived, which considers the effect of the electrode dimensions and of the distance between the electrodes on the value of the surface resistance of dielectric substances, in the case of the absence of a layer with increased conductivity on the surface of the dielectric substance. The current between the electrodes (which are fitted to one surface side) here passes through the entire mass of the material and not only in the thin surface.

Card 2/3

105-58-3-15/31

On the Surface Resistance of Dielectric Substances

layer. In the investigation of the second case the physical meaning of the equation $\gamma_S = 1/\beta_S$ becomes evident. In the form of the equation (7) $\gamma_S = n_{\text{surface}} \cdot K \cdot q$ it obtains its final shape. - n_{surface} denotes δn and indicates the number of ions in the surface range in an area of 1 cm^2 (surface-ion-density) K denotes the ion mobility. q denotes the charge of the ion. Summarizing, it is stated that the measurement of the surface resistance is to be carried out by means of spherical electrodes of exact and certain dimensions. The method of determining $R_S(\rho_S)$ recommended in GOST 6433-52 is incorrect. There are 5 figures and 7 references, 6 of which are Soviet.

ASSOCIATION: Moskovskiy energeticheskiy institut
(Moscow Institute for Power Engineering)

SENT: July 4, 1957

Card 3/3

GEPPE, A.P., inzh., assistant

Effect of dot-size defects on the insulation-disruptive voltage level for enamel wire. Trudy VZNI no.9:250-255 '58.

(MIRA 12:10)

(Electric insulators and insulation)

GEPPE, A. P. Cand Tech Sci -- (diss) "Study of special heat-resistant enamel conductors and several methods of electrical testing." Leningrad, 1960, 17 pp, (Min Higher and Secondary Specialized Education, RSFSR, Leningrad Electrical Engineering Inst im V. I. Ulyanov (Lenin), 200 copies, (II, 31-60, 141)

GEPPE, A.P.; TERNOVSKAYA, G.V.; ROZOVSKAYA, G.D.; NIKOLOTOVA, Ye.E.

Changes occurring in some electric properties of rubber during
its swelling in the solvents. Kauch. i rez. 22 no.9:17-19 S '63.
(MIRA 16:11)

1. Nauchno-issledovatel'skiy institut rezinovoy promyshlennosti.

GEPPERT, B.P.

Intratisue oxygen therapy in paradentosis. Stomatologia 40
no.4:93-95 Jl-Ag '61. (MIRA 14:11)
(GUMS--DISEASES) (OXYGEN--THERAPEUTIC USE)

GEPPERT, Maksymilian

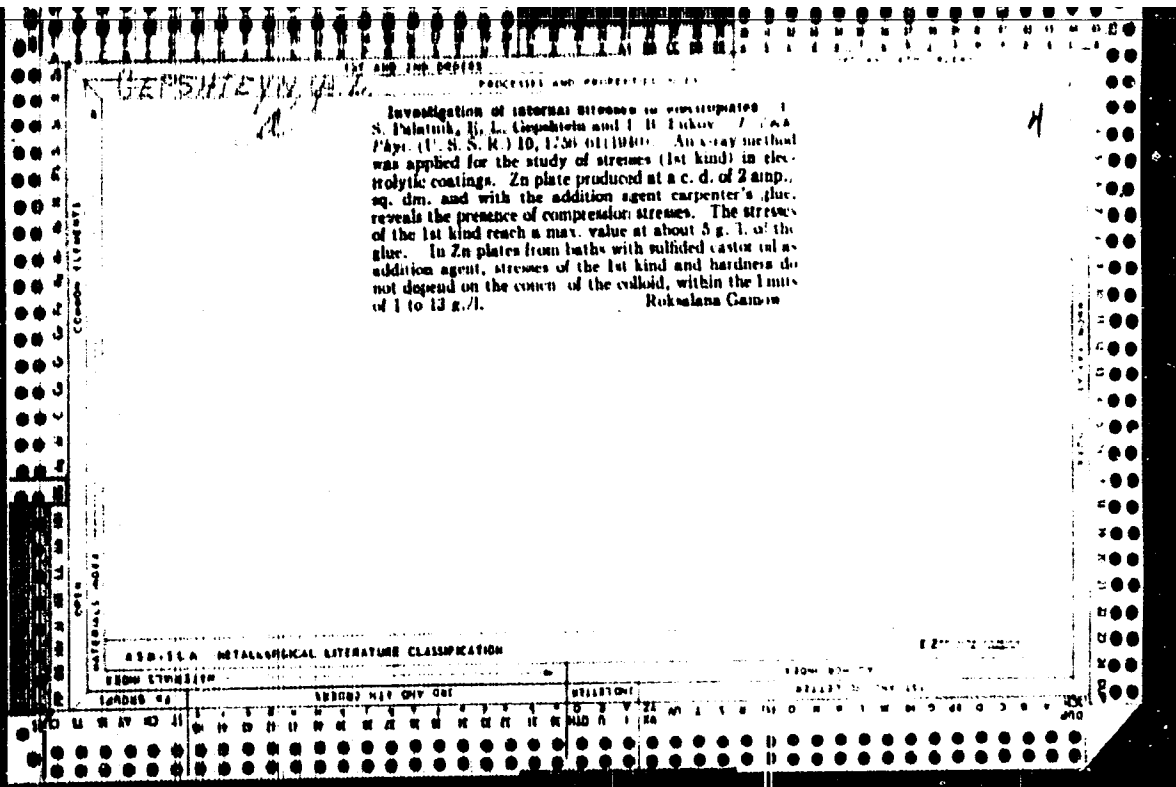
"Exercises for the autogene training" by J.H.Schultz. Reviewed by
Maksymilian Geppert. Przegl psychol no.5:185-186 '62.

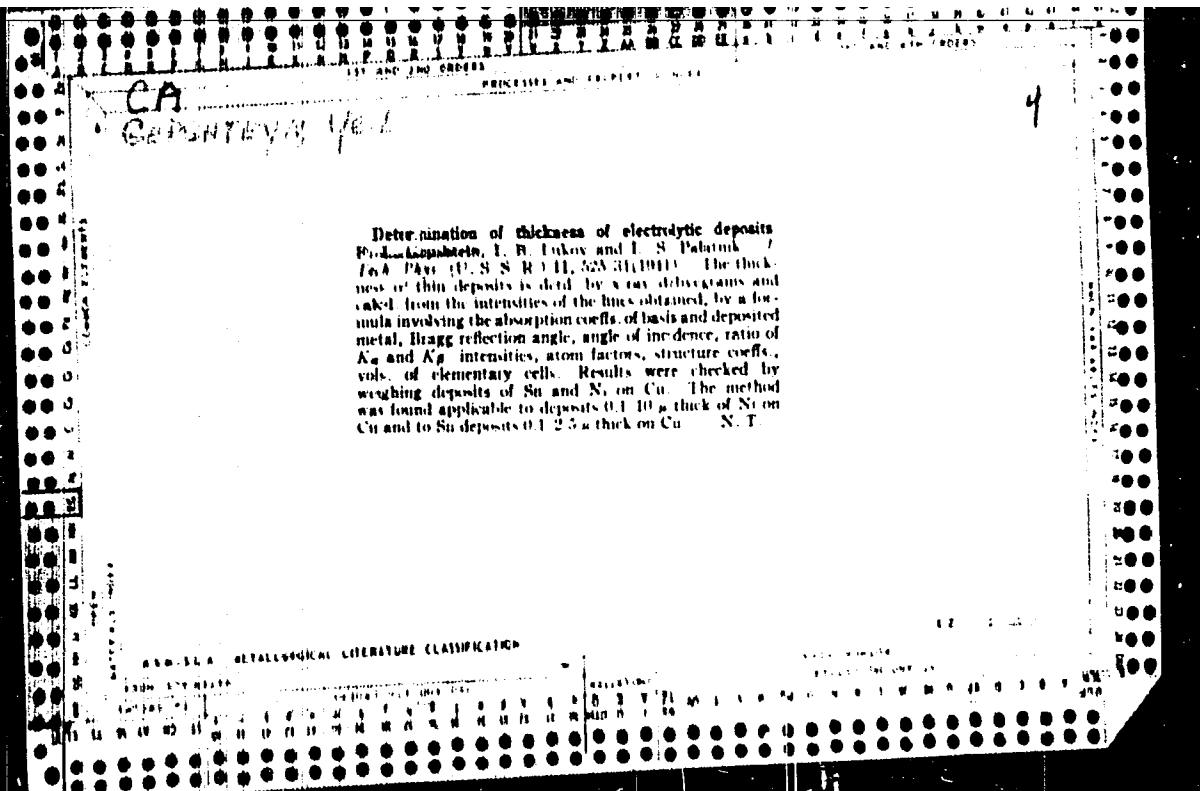
GEPPERT, Wlodziłmarz

New achievements in the midtown housing construction, Architektura
Pol no.11/12:449-455 '61.

GRPSHTEN, N. A.

1 RJ-67 (Synthesis and transformations of vinyl ethers of ethanolamines. I.
Vinilation of monethanolamine) Sintez i prevrashcheniia vinilovykh efirov etanolamina
Soobshchenie I. Vinilirovanie monoetanolamina.
IZVESTIYA AKADEMII NAUK SSSR. OTDELENIE KHIMICHESKIH NAUK (3): 328-333, 1951





YEFIMENKO, V., zasluzhennyy master sporta, rekordsmen Sovetskogo Soyuzo po aviatsionnym vidam sporta; GEPFENER, I., sportsmenka pervogo razryada, rekordsmen Sovetskogo Soyuzo po aviatsionnym vidam sporta; DROZDEZHIN, N., master sporta, rekordsmen Sovetskogo Soyuzo po aviatsionnym vidam sporta; MEYLAKHS, M., master sporta, rekordsmen Sovetskogo Soyuzo po aviatsionnym vidam sporta; SOLOV'YEVA, I., master sporta, rekordsmen Sovetskogo Soyuzo po aviatsionnym vidam sporta.

Let us open an account of Spartakiada records. Kryl.rod. 11 no.11:
2 H '60.

(MIRA 13:10)

(Airplane racing)

POZDETYA, A.G.; GRPSHTEYN, Ye.M.

Reduction of pyridine and its homologs on the dropping-mercury electrode.
Zhur. Obshchey Khim. 22, 2065-70 '52. (MLRA 5:12)
(CA 47 no.18:9325 '53)

1. Eastern Coal Chem. Inst., Sverdlovsk.

NOVIKOV, N.N.; ~~GEPSHTEYN, L.M.~~ ~~SREBRYAKOVA, Ye.K.~~; GUREVICH, B.S.

Composition of coal tar from the coals of the Kuznetsk Basin. Koks
i khim.no.8:36-40 '56. (MIRA 10:1)

^{State}
1. Vostochnyy uglekhimicheskiy institut.
(Kuznetsk Basin--Coar tar)

AUTHOR: Gepshteyn, Ye. M.

SOV/68-59-3-12/23

TITLE: Production of Pure Products from Light Pyridine Bases
(Polucheniye chistykh produktov iz legkikh
piridinovykh osnovaniy)

PERIODICAL: Koks i Khimiya, 1959, Nr 3, pp 49-53 (USSR)

ABSTRACT: During the last few years VUKHIN developed methods suitable for a low tonnage production of β and γ picoline, 2,6- and 2,4- lutidine and 2,4,6- collidine of reagent's purity from raw light pyridine bases. The construction of an appropriate plant on the Nizhniy Tagil Works is being planned. A description of the method of separation of the above bases is given. The principle of the method is based on successive separation of 2,6- lutidine, β and γ picolines, by selective precipitation of respective complex compounds. The separation of 2,6-lutidine from β picoline fraction is done by the precipitation of a complex with urea (ref 1) which is filtered off. From the filtrate β picoline is precipitated by the formation of a complex with copper

Card 1/3