CHALABALA, M.

Study of tablets. III. New method for the determination of the mechanical resistance of tablets. Cesk. farm. 12 no.1:11-13 Ja '63.

1. Katedra galenicke farmaceuticke fakulty University Komenenskeho, Bratislava.

(TABLETS) (CHEMISTRY, PHARMACEUTICAL)

CHALABALA, M.; MALY, J.

Advances in the production and control of tablets. V. Cesk. farm. 12 no.1:47-50 Ja '63.

1. Katedra galenicke farmacie farmaceuticke fakulty University Komenskeho, Bratislava.

(TABLETS) (CHEMISTRY, PHARMACEUTICAL)

CHALABALA, M.; MALY, J.

Progress in the technology of drugs in 1961. Cesk. farm. 12 no.3: 139-153 Mr '63.

1. Katedra galenicke farmacie, farmaceuticka fakulta UK, Bratislava.
(DRUGS) (CHEMISTRY, PHARMACEUTICAL) (TABLETS)
(EMULSIONS) (SUSPENSIONS)

CHALABALA, M.; MALY, J.; BURELEVA, A.; STARHA, L.

Advances in the technology of drugs during the period 1962 and 1963. Cesk. farm. 13 no.8:402-419 O '64.

1. Katedra galenicke farmacie farmaceuticke fakulty University Komenskeho.

CHALABALA, M., Doc. PhMr. CSc. (Bratislava, Ul. odbojarov 12); MALY, J.

Progress in the production and control of tablets. Pt.7. Cesk. farm. 14 no.4:171-175 My '65.

1. Katedra galenicke farmacie farmaceuticke fakulty Univerzity Komenskeho, Bratislava.

CHALABALA, M.

The pharmacist and society. Cesk. farm. 14 no.5:201-202 Je '65.

CHALABALA, M.; RUSEK, V.

Evolution and organization of pharmaceutical education in Czechoslovakia. Cesk. farm. 14 no.6:275-280 Ag '65.

1. Farmaceuticka fakulta Univerzity Komenskeho, Bratislava.

SOLICH, J., doc. PhMr. CSc. (Brno, Orli 10); CHALABALA, M.

On various problems of the need for pharmacists in Czechoslovakia. Cesk. farm. 14 no.7:335-339 S '65.

1. Farmaceuticka fakulta Univerzity Komenskeho, Bratislava.

CHALABALA, M., doc. PhMr. CSc. [illegible] Nabojarov 12); BURELOVA, A.

Sterilization and sterile preparation in pharmacy. Pt.1. Cesk. farm. 14 no.7:355-359 S '65.

1. Katedra galenicke farmacie farmaceuticke fakulty Univerzity Komenskeho, Bratislava.

CZECHOSLOVAKIA

CHALABALA, M.; BURELOVA, A.; Department of Galenic Pharmacy, Pharmaceutical Faculty, Comenius University (Katedra Galenicke Farmacie Farmaceuticke Fakulty UK), Bratislava.

"Sterilization and Sterile Preparations in Pharmacy, IV, Dry Heat Sterilization."

Prague, Ceskoslovenska Farmacie, Vol 16, No 2, Feb 67, pp 100-104

Abstract: Conditions required for satisfactory sterilization are reviewed. Minimum temperatures and length of stay are discussed. The use of air as a sterilization medium and the apparatus required for this technique are discussed. The use of infrared radiation and of a high frequency field in a dielectric medium are described. The control of the course of sterilization is described. 54 Western, 4 Czech, 2 USSR, 4 Polish, 2 Hungarian references.

1/1

ACC NR: AP6019036 (A) SOURCE CODE: UR/0173/65/018/006/0064/0071

AUTHOR: Varshavskiy, I. L.; Malov, R. V.; Chalabov, V. G.; Goncharov, V. V.

ORG: KTB Minavtotransa ArmSSR

TITLE: Catalytic purification of exhaust gases of carburetor engines on alumino-platinum balls

SOURCE: AN ArmSSR. Izvestiya. Seriya tekhnicheskikh nauk, v. 18, no. 6, 1965, 64-71

TOPIC TAGS: exhaust gas, carbon monoxide, aluminum compound, platinum, FUEL OXIDATION

ABSTRACT: Oxidation of the toxic components of an incomplete combustion of gases (mostly CO and a small amount of cancerogenic substances) on a catalyst is one of the methods for rendering exhaust gases harmless. The burning of small amounts of CO on the catalyst consists of three processes: diffusion of the CO molecules on the surface of the catalyst, catalytic oxidation of CO into CO_2, and diffusion of the CO_2 molecules into the atmosphere. During continuous oxidation of CO all of these processes occur simultaneously. The quasistationary method offered by D. A. Frank-Kamenetskiy (Zhurnal fizicheskoy khimii 13, 756, 1939) was used during the study of the oxidation of CO on Al-Pt balls. The study was made in a special apparatus consisting of two parts. One part was used to study the changes in the volume of flowing gas, and the other to study the degree of neutralization of the entire amount of the engine's exhaust gases.

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ACC NR: AP6019036

The MZMA-407 carburetor engine was used as a generator for the gases. The catalyst was charged into the reactor (see Fig. 1, where 1 is the body of the reactor, 2 is the reactor screen, 3 is the cover, 4 is a pipe for taking samples, and 5 is a thermocouple) between two stainless steel screens. Platinum applied to the Al_2O_3 spheres (diameter 3-5 mm) was used as a catalyst. One gram of Pt was needed for producing 1 kg of catalytic elements. Two types of catalysts were tested: (1) with surface coating of the balls with Pt, and (2) with surface coating with part of the Pt penetrating deep into the grains of the spheres (internal diffusion).

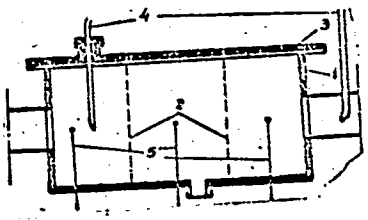

Figure 1.

The process of combustion was investigated in both types of catalyst at a temperature $\leq$ 400C. The curves were plotted in coordinates $a = F(t)$, where $a = [(c_i - c_f)/c_i] \cdot 100$, t is the temperature, and c_i and c_f are concentrations of CO in the gases at the entrance and exit of the reactor, respectively. The interpretation of the curves showed that at $\leq$ 200C the reaction occurred in the kinetic region. At gas temperatures > 300C the diffusion of the components to the active centers of the catalytic elements played a predominant part in combustion. It was shown that the quantity of catalytic elements necessary for the entire detoxication of exhaust gases could be calculated from the criterial equation $Sh = 0.05\ Re^{0.7}$, where Re is the Reynolds criterion, Sh is the Sherwood crit. $= \beta_c D/k_c$, β_c is the constant of the diffusion rate reduced to the difference in concentrations, d is the controll-

Card 2/3

ACC NR: AP6019036

ing parameter, and k_c is the diffusion coefficient reduced to the concentration gradient and controlled by Fick's law. The neutralizing apparatus designed from this formula provided for complete purification from CO of the exhaust gases of the GAZ-51 automobile under every possible operating condition. Orig. art. has: 4 fig., 4 formulas, and 1 table.

SUB CODE: 07/ SUBM DATE: 07Jan65/ ORIG REF: 003

Card 3/3

ADUNTS, G.T.; NERSESYAN, R.R.; CHALABYAN, G.A.

Activation of amylase by bile. Izv. AN Arm. SSR. Biol. nauki 13 no.10:97-99 '60. (MIRA 13:12)

1. Sektor biokhimii Akademii nauk ArmSSR.
(AMYLASE) (BILE)

CHALABYAN, Zh.A.

Effect of gamma-aminobutyric acid on the metabolism of nucleic acids in the rabbit brain. Ukr. biokhim. zhur. 36 no.3:367-372 '64. (MIRA 17:10)

1. Institut biokhimii AN UkrSSR, Kiyev.

CHALABYAN, Zh.A.

Effect of gamma aminobutyric acid on the content of free nucleotides in the brain of rabbits. Vop. biokhim. moz. 1:61-66 '64.
(MIRA 18:9)

1. Institut biokhimii AN UkrSSR, Kiyev.

CHALABYAN, Zh.A.

Effect of semicarbazide and hydroxylamine on the rate of P^{32} incorporation into nucleic acids of the rabbit brain. Vop. biokhim. moz. 1:157-162 '64. (MIRA 18:9)

1. Institut biokhimii AN UkrSSR, Kiyev.

CHALACEV, V.

A new simpified circuit for C.B. and dial type telephone sets. p.173.
(Slaboproudy Obzor, Vol. 18, No. 4, April 1957, Praha, Czechoslovakia)

SO: Monthly List of East European Accessions (EEAL) LC. Vol. 6, No. 9, Sept. 1957. Uncl.

CHALAGANIDZE, Sh. I. Cand Tech Sci -- (diss) "Study of the process of iron plating from phenolsulfonic electrolytes for the purpose of using it in the repair of motor-tractor parts." Tbilisi, (Pub House of the Georgian Agr Inst) 1959. 20 pp (Min of Agr GSSR. Georgian Order of Labor Red Banner Agr Inst), 100 copies (KL, 46-59, 138)

CHALAGANIDZE, SH. I.

28(5) SOV/32-25-7-33/50

AUTHORS: Khrushchov, M. M., Babichev, M. A., Chalaganidze, Sh. I.

TITLE: New Method of Determining the Abrasion Resistance of Galvanically Deposited Metals (Novyy metod otsenki iznosostoykosti gal'vanicheski osazhdennykh metallov)

PERIODICAL: Zavodskaya laboratoriya, 1959, Vol 25, Nr 7, pp 872-875 (USSR)

ABSTRACT: A material similar to carbonaceous steel (Ref 1) which can be used for repairing abraded machine elements can be obtained by electrolytic deposition of iron. In this connection the properties of these deposits obtained from varicus electrolyte baths and by various working techniques have to be systematically investigated. The abrasion method on the machine Kh4-B (designed at the Institut mashinovedeniya AN SSSR (Institute of Machine Construction of the AS USSR)) (Ref 2) is most favorable for determining the abrasion resistance (AR) of galvanic deposits. The application of this method by means of the machine Kh4-B (Fig 1, Diagram) for the determination of the (AR) of iron deposits from 3 different baths is described. Tempered steel 9KhS and the lead-tin alloy BM were used as standard. Sh. I. Chalaganidze deposited iron from the following

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New Method of Determining the Abrasion Resistance of Galvanically Deposited Metals

three baths: bath Nr 1 with iron containing hydrofluoboric acid, and with boric acid and hydrofluoric acid; bath Nr 2 with iron sulfate and aluminum sulfate; bath Nr 3 with iron phenol sulfonate and phenolsulfonic acid. The temperature of the baths was 40°, current density 5 and 8 a/dm^2, thickness of the deposits obtained 0.45-0.47, 0.30 and 0.45 mm. The deposition took place on foils of steel 45. Before the abrasion test the surface hardness of the deposits was tested on the machine PMT-2. The testing results obtained showed that the greatest (AR) was not observed with the greatest hardness. The hardness of the deposits obtained from bath Nr 1 is increased by the tempering the deposit, whereas the increased hardness of the deposits from bath Nr 2 is caused by an alloy of iron with hydrogen. Various explanations are given by a diagram "relative (AR) - hardness" of types of steel treated in different ways. There are 3 figures and 4 Soviet references.

ASSOCIATION: Institut mashinovedeniya Akademii nauk SSSR i Gruzinskiy institut mekhanizatsii i elektrifikatsii sel'skogo khozyaystva

SOV/32-25-7-33/50

New Method of Determining the Abrasion Resistance of Galvanically Deposited Metals

(Institute of Machine Construction of the Academy of Sciences of the USSR and Georgian Institute of Mechanization and Electrification of Agriculture)

Card 3/3

CHALAGANIDZE, Sh.I.

Steel coating in a phenolsulfonic electrolyte. Mashinostroitel' no.4:14-15 Ap '62. (MIRA 15:5)

(Iron plating)

Chalakhyan, M. Kh.

CHALAKHYAN, M.Kh.; BUTENKO, R.G.

Translocation of assimilates from leaves to shoots under differential photoperiodic conditions of leaves [with summary in English]. Fiziol. rast. 4 no.5:450-462 S-O '57. (MIRA 10:11)

1. Institut fiziologii rasteniy AN SSSR, Moskva.
(Plants, Motion of fluids in) (Photoperiodism)

CHALAKOV, Kirill

Pathophysiological analysis of certain early symptoms of schizophrenia.
Zhur. nerv. i psikh. 54 no.9:721-727 S '54. (MIRA 7:9)

1. Psikhiatricheskaya klinika pri Meditsinskoy akademii imeni I.P. Pavlova (Plovdiv, Bolgariya)
(SCHIZOPHRENIA, manifestations,
early symptoms)

CHALANKA-KWARTOWA, H.

Parnas, J., Lorkiewicz, Zb., Szczygielska, J., Chalanka-Kwartowa, H., Kadziolka, A.: "Badania nad wirusem neumotropowym swin w P.G.R." (Studies on pneumotropic virus in pigs on State Farms), Annales U.M.C.S., IX, 1, 1954.

CHALASHKANOV, N.

"The correct flow of the fuel-burning process, a necessary condition for the durability and economy of the motors with internal combustion"

Teshka Promishlenost. Sofiia, Bulgaria. Vol. 8, no. 2, Feb. 1959

Monthly list of East European Accessions (EEAI), LC, Vol. 8, No. 6, Jun 59, Unclas

CHALASHKANOV, N., st. prep. inzh.

Downhill motion of automotive vehicles with running but nonoperating engines (without fuel combustion), and study of its effect. Godishnik Min geol inst 9:101-109 '62-'63[publ. '64].

CHALASHKANOV, N., inzh.

Effect of the operation of steel rings in worn-out cylinders of piston internal-combustion engines. Mashinostroene 12 no.10:22-25 O'63.

CHALASINSKI, J.

"The problem of nation in the life and thought of Albert Einstein"

p. 12 (Review, Vol. 3, no. 1, Jan/Mar. 1958, Warsaw, Poland)

Monthly Index of East European Accessions (EEAI) LC, Vol. 8, No. 1, Jan. 59.

BAYGUTTIYEV, S.B.; GVOZDETSKIY, N.A.; CHALAYA, I.P.

[redacted]

Mapping landform types of Arabel'su mountain pastures in Inner Tien Shan. Trudy Otd.geog.i Tian.fiz.-geog.sta.AN Kir.SSR no.1:23-49 '58. (MIRA 12:2)
(Arabel'su Valley--Maps)

CHALAYA, I.P.

Practice in the classification of the landforms of the Tien Shan. Biul. MOIP Otd. geol. 40 no. 6:157 N-D '65 (MIRA 19:1)

1. Submitted May 7, 1965.

CHALAYA, L. I.

"Materials on the Epidemiology of Trichomoniasis of Man."

Tenth Conference on Parasitological Problems and Diseases with Natural Reservoirs, 22-29 October 1959, Vol. II, Publishing House of Academy of Sciences, USSR, Moscow-Leningrad, 1959.

Institute of Medical Parasitology and Tropical Medicine, Moscow

CHALAYA, L.Ye.; NOSINA, V.D.; BOBKOVA, V.I.; KAMOLIKOVA, Z.Ya.

Amebiasis in Turkmenistan. Med. paras. i paras. bol. no.3:260-264 Jl-S '54. (MLRA 8:2)

1. Iz sektora eksperimental'noy parazitologii Instituta malyarii, meditsinskoy parazitologii i gel'mintologii Ministerstva zdravookhraneniya SSSR (dir. instituta prof. P.G.Sergiyev, zav. sektorom prof. V.P.Pod"yapol'skaya)
(AMEBIASIS, epidemiology,
Russia)

CHALAYA L. Ye.

CHALAYA, L.Ye.; SCHENSNOVICH, V.B.

Scientific conferences of the Institute of Malaria, Medical Parasitology and Helminthology of the Ministry of Public health of the U.S.S.R. Med.paras. i paraz. bol.24 no.2:190-191 Ap-Je '55. (PARASITOLOGY) (MLRA 8:10)

CHALAYA, L.Ye.; OZERETSKOVSKAYA, N.N.

Scientific meeting at the expanded conference of directors of institutes of malaria and medical parasitology and of workers directing sanitary and epidemic control services, April 14-16 1955. Med.paras. i paraz.bol.24 no.3:276-282 Jl-S '55(MLRA 8:12)
(PARASITOLOGY,
in Russia, conf.)
(EPIDEMIOLOGY,
in Russia, conf.)

CHALAYA, L.Ye.

Scientific conference at the All-Union congress on the control of parasitic diseases of the Ministry of Public Health of the U.S.S.R. Med.paras. i paraz.bol. 25 no.3:281-286 Jl-S '56. (MLRA 9:10)
(PARASITOLOGY)

CHALAYA, L.Ye., TARASOVA, T.D.

The role of Lamblia in the etiology of chronic intestinal disturbances in small children [with summary in English]. Med. paraz. i paraz. bol. 27 no.2:176-182 Mr-Ap '58 (MIRA 11:5)

1. Iz Instituta malyarii, meditsinskoy parazitologii i gel'mintologii Ministerstva zdravookhraneniya SSSR (dir. - prof. P.G. Sofiyev) i yasley No.35 Frunzenskogo rayona Moskvy.
(GIARDIASIS, in infant & child
causing chronic intestinal disord. (Rus))
(GASTROINTESTINAL DISEASES,
chronic intestinal disord. in inf. & child. caused by recurr. infestation with Giardia (Rus))

RABENKO, L.V.; BUYANOVA, O.F.; KELLINA, O.I.; LEYKINA, Ye.S.; RAZUMOVA, Ye.P.; FASTOVSKAYA, E.I.; CHALAYA, L.Ye.; SHIPITSINA, N.K.

All-Union Conference on the Control of Parasitic Diseases. Med.paraz. i paraz.bol. 28 no.3:364-373 My-Je '59. (MIRA 12:9)

(PARASITOLOGY--CONGRESSES)

CHALAYA, L.Ye.

Abstract from the resolution of the All-Union Conference on Parasitic Diseases, March 4-7, 1959. Med.paraz. i paraz.bol. 28 no.3:373-377 My-Je '59. (MIRA 12:9)
(PARASITOLOGY)

KOLOSOVA, M. O.; CHALAYA, L. Ye.; VORONINA, Z. K.

Chemical structure and antitrichomonal activity of derivatives of thiazole and benzothiazole. Med. paraz. i paraz. bol. no.6: 703-709 '61. (MIRA 15:6)

1. Iz otdela sinteticheskikh preparatov i otdela protozoologii Instituta meditsinskoy parazitologii i tropicheskoy meditsiny imeni Ye. I. Martsinovskogo Ministerstva zdravookhraneniya SSSR (dir. - prof. P. G. Sergiyev)

(TRICHOMONAS) (THIAZOLE) (BENZOTHIAZOLE)

SCHENSNOVICH, V.B.; CHALAYA, L. Ye.; SMIRNOVA, Ye.N.

Distribution of some protozoan intestinal diseases in man in Moscow. Med. paraz. i paraz. bol. 32 no.6:714-718 N-D '63 (MIRA 18:1)

1. Iz protozoologicheskogo otdela (zav. - prof. Sh.D. Moshkovskiy) Instituta meditsinskoy parazitologii i tropicheskoy meditsiny imeni Ye.I. Martsinovskogo (direktor - prof. P.G. Sergiyev) Ministerstva zdravookhraneniya SSSR.

CHALAYA, M. F.

"Effect of Adrenalin upon the Explants of the Myocardium and the Skeletal Muscle," Medych. Zhur., 20, No 4, 1950

CHALAYA, M. F.

"The Action of Carbocholine on Explantates of Heart and Skeletal Muscles," Inst. of Experimental Biol. and Pathol. im. O.O.Bogomolets, Medich. Zhur., Vol. 23, No 1, pp 61-66, 1953

Expts were carried out to determine whether carbocholine can act directly on muscle elements in tissue cultures or whether its action on muscles takes place only through nerve endings. It was established that carbocholine may act directly on explanted heart muscles of chicken embryos in the first stages of the embryos' development or on myoplasts of somatic muscles grown under the same conditions. This effect, although in general characteristic for the pharmacological activity of carbocholine, may be occasionally inverted, diphasic, or totally absent. These results, obtained in vitro, do not necessarily apply to conditions in vivo. 255T31

CHALAYA, M.[E.]

TIMOFEYEVSKIY, A.D.; GORODETSKIY, A.A., professor; CHALAYA, M., mladshiy nauchnyy sotrudnik.

Studies of the comparative effects of X rays on normal and neoplastic human tissue explants following single and repeated exposures. Vest.rent.i rad. no.6:15-22 N-D '53. (MLRA 7:1)

1. Iz otdela eksperimental'noy teitologii (zaveduyushchiy - deystvitel'nyy chlen Akademii meditsinskikh nauk SSSR A.D.Timofeyevskiy) i otdela eksperimental'noy rentgenologii (zaveduyushchiy - professor A.A.Gorodetskiy) Instituta eksperimental'noy biologii im. akademika A.A.Bogomol'tsa (direktor - professor O.A.Bogomolets) Ministerstva zdravookhraneniya USSR.

(X rays--Physiological effect)

CHALA, M.P.

Effect of carbocholine on explanted cardiac and skeletal muscles.
Medych. zhur. 23 no.1:61-66 ' 53. (MLRA 8:2)

1. Institut eksperimental'noi biologii i patologii im. akad. O.O. Bogomol'tsya.
(CHOLINE) (MUSCLE)

CHALAYA, M.F.

[Effects of adrenalin and carbocholine on explants of connective and muscular tissue; dissertation for the degree of candidate of the medical sciences] Deistvie adrenalina i karbokholina na eksplantaty soedinitel'noi myshechnoi tkani; avtoreferat dissertatsii na soiskanie uchenoi stepeni kandidata meditsinskikh nauk. Kiev, Kievskii institut epidemiologii i mikrobiologii, 1955. 9 p. (MLRA 9:4)

1. Kiyevskiy institut epidemiologii i mikrobiologii (Direktor - kandidat meditsinskikh nauk S.N.Terekhov, nav. lab.deystv. chl. AN SSSR prof. A.D.Timofeyevskiy)

(ADRENALIN) (CHOLINE)

Chala M.F.

USSR/Virology. Viruses of Man and Animals. E-3

Abs Jour: Ref. Zh.-Biol., No 9, 1957, 35427

Author : Sirotina, M.I., Chala, M.F.
Inst : Inst. Entomology + Phytopathology, AS UkrSSR
Title : Concerning Virus Bearing in the Oak Bombyx

Orig Pub: Dopividi AN URSR, 1956, No 2, 177-180

Abstract: The hemolymph of caterpillars and butterflies of the oak bombyx, which had been treated with pepsin and HCl was studied under an electron microscope at various stages of the development of jaundice. In caterpillars at the height of the sickness, they found bundles of bacillar-like particles measuring 700X150 millimicrons. In the earlier stages of the sickness, particles measuring 150-200 X 50 millicrons were detected. In the butterflies gotten from the pupae, which had survived among the sick groups, they detected particles 200-300 X 50-150 millimicrons. Besides this, in the butterflies and caterpillars at the earlier stages of the

Card : 1/2 -11-

sickness, they found spherical particles with a diameter of 30-50 millimicrons. The virus particles were not evident in healthy cases.

Chalaya, M. F.

Studying the question concerning the presence of intracellular inclusions in cultures of the chick embryonal tissue during the action upon the latter of extracts from cancerous tumors of the stomach and from the lactiferous glands of man. 0.265

Materialy nauchnykh konferentsii, Kiev, 1959. 280pp
(Kievskiy Nauchno-issledovatel'skiy Institut Epidemiologii i Mikrobiologii)

GRAGEROVA, R.B.; CHALAYA, M.F.; ASHMARINA, O.K.

Detecting the oncogenic factor in human gastric cancer extracts by means fo cultivation in tissue cultures. Vop. virus. 7 no.3:316-321 My-Je'62. (MIRA 16:8)

1. Laboratoriya etiologii opukholey Kiyevskogo instituta epidemiologii i mikrobiologii.
(STOMACH—CANCER) (TISSUE CULTURE)
(VIRUSES)

2543
S/185/61/006/002/010/020
D210/D304

26.2421

AUTHORS: Konozenko, I.D., Svyechnykov, S.V., and Chalaya, V.G.

TITLE: Some features of photo and X-ray - conductivity of single crystals of cadmium sulphide

PERIODICAL: Ukrayins'kyy fizychnyy zhurnal, v. 6, no. 2, 1961, 207 - 212

TEXT: In this article the authors describe measuring current relaxation of single crystals of cadmium sulphide induced by visible light and X-rays, giving a qualitative explanation on the similarity of these two phenomena. This work was done because despite the large amount of data on X-ray conductivity, no adequate theory exists which would allow the prediction of conductivity induced by visible light. The best comparison of the effect of X-rays and light on electrical conductivity can be made at the beginning of the curve I = f(t), where essentially electron attachments are controlling. Assuming at the same time that within certain limits

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Some features of photo and ...

the mean life of current carriers is independent of the mode of excitation, then the current decay curves should be of the same type for X-rays and for visible light. A suitable basis for comparison then is to work under conditions of equal absorption coefficient and equal power absorption by the lattice. The authors have, therefore, made measurements under conditions of equal absorption coefficients for the X-rays and visible light, and equal stationary currents through the crystal, as the power absorption could not be measured directly. The cadmium sulphide crystals were grown from vapor phase, by a method developed at the Institute. Aluminum electrodes were used. These gave linear characteristics from a fraction of a volt to a few ... volts. The X-ray machine gave a supply of steady intensity from which the copper line k_α was separated giving an absorption coefficient of 10^3 cm^{-1} in CdS. A corresponding coefficient for visible light is obtained at $\lambda = 5100$ Å. The monochromatic light was obtained using interference filters giving transmission bands of $\Delta\lambda = 80$ Å. The experimental arrange-

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Some features of photo and ...

ment allowed separate or simultaneous excitation with continuous or pulsed signals of the necessary (sufficiently long) duration. The commencement and removal of excitation was registered by a germinium photodiode. The CdS current and the photodiode current were simultaneously recorded on a loop oscillograph. Conductivity measurements made on samples kept in darkness for one hour showed little change from ordinary samples for X-rays, but a fairly large change was observed for visible rays due to the equilibrium relationship between electrons and corresponding levels in the forbidden zone. Similar effects were obtained for extra illumination. For illumination with white light, to give a current of 0.6 x 10^{-7} amp. the S shape and the point of inflection were removed in most cases, resulting in similar curves for X-rays and visible light. There are 4 figures and 15 references: 5 Soviet-bloc and 10 non-Soviet-bloc. The references to the 4 most recent English-language publications read as follows: Hollander, Nucleonics, 14, b, 10, 1956; Sihvonen, Rev. Scient. Instr., 27, b, 5, 1956; Frederichs Jacobs., Gen. El. Rev., 54, b, 1, 1956; Dutton, Phys. Rev., 112, b. 3, 1958.

Card 3/4

28438
S/185/61/006/002/010/020
D210/D304

Some features of photo and ...

ASSOCIATION: Instytut fizyky AN URSR m. Kyyiv (Institute of Physics, AS UkrSSR, Kiyev)

SUBMITTED: June 30, 1960

Card 4/4

ACCESSION NR: AT3004539 S/2947/62/002/000/0153/0160

AUTHOR: Svechnikov, S. V.; Chalaya, V. G.

TITLE: Spectral distribution of the internal photoelectric effect in single crystals of cadmium sulfide during excitation by x-rays

SOURCE: Radioizotopny*ye metody* avtomaticheskogo kontrolya; trudy* rasshirennogo soveshchaniya Vsesoyuznogo seminara po primeneniyu radioaktivny*kh izotopov v izmeritel'noy tekhnike i priborostroyenii, v. 2, Frunze, 1962, 153-160

TOPIC TAGS: spectral distribution, photoelectric effect, crystal, Cd, S, current carrier, Cr, Fe, Co, Mo, Cu, Ag, W, monochromatic light, visible light, wave length, sensitivity, energy, impurity, injection, excitation, quantum yield, hard radiation, soft radiation

ABSTRACT: The considerable conductivity of CdS in x-rays is manifest in a wide range of wave lengths and depends on the hardness of the radiation, the size and properties of the crystal itself, and, especially, the quantity and quality of the injected impurities. Experience has shown that crystals of CdS that are sensitive to x-rays have energies of 0.5-1.5 Mev. The authors detected no correlation between sensitivity of CdS single crystals to visible light and sensitivity of crys-

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ACCESSION NR: AT3004539

tals to x-rays. Spectral curves were made for crystals 5, 19, 34, and 300 microns thick. Tubes were used as a source of monochromatic radiation, the tubes having an anticathode of Cr, Fe, Co, Mo, Cu, Ag, or W. K_α radiation was used with a crystal monochromator, permitting a range of wave lengths from 0.2 to 2.3 Å. It was found from the experiment that the results depend essentially on the coherence of the monochromatized radiation. The spectral distribution of the additional current in single crystals during excitation by x-rays was found to depend on several factors. The current was found to increase with hardness of the radiation, in correspondence with increase in quantum yield. The principal maximum of the curve $i = f(\lambda)$ lies in the short-wave part of the spectrum, in the region of $\lambda < 0.71$ Å. Its position is determined by the reabsorption of secondary radiation of Cd and is a function of crystal thickness: with increase in crystal thickness the maximum of the additional current shifts toward shorter wave lengths. The curves of spectral distribution of the additional current obtained under conditions of constant absorption of quanta in the crystal are similar to those obtained under conditions of constant absorption of energy. This leads to the conclusion that the average lifetime of current carriers in single crystals of CdS does not depend, in the first approximation, on wave length of the x-rays in the range $\lambda = 2.3 - 0.71$ Å. The deltaform shape of the curve $i = f(\lambda)$ is reason for stating that single crystals of CdS may be used as selective receivers of x-rays of low and medium

Card 2/3

ACCESSION NR: AT3004539

hardness. Orig. art. has: 3 figures, 1 table, and 11 formulas.

ASSOCIATION: none

SUBMITTED: 00 DATE ACQ: 21Aug63 ENCL: 00

SUB CODE: PH NO REF SOV: 003 OTHER: 004

Card 3/3

37186
S/185/62/007/004/010/018
D407/D301

24,3500

AUTHORS: Svyechnykov, S. V., Chalaya, V. N., and Sheynkman, M. K.

TITLE: On the probe characteristics of X-ray and photoelectric current in CdS-type single crystals

PERIODICAL: Ukrayins'kyy fizychnyy zhurnal, v. 7, no. 4, 1962, 396-401

TEXT: The dependence was studied of the photocurrent on the position of the probe (between the electrodes) during the excitation of CdS, CdSe, $CdS_x \cdot CdSe_{1-x}$ single crystals by a narrow light or X-ray probe. The influence of the following processes on the conductivity of the single crystals under local excitation was considered: electron drift from the lighted to the dark side of the crystal, bipolar diffusion of photocarriers, exciton

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D407/D301

On the probe...

diffusion, resonance energy transfer in dipole-dipole interactions, reabsorption of the luminescence light, etc. It was found that no definite conclusion can be reached for the dominant photo-current component and the role of the hole component by considering the stationary probe characteristic of the photocurrent only. The probes were 0.1 mm thick, which is by one order of magnitude less than the distance between the electrodes. Visible light of various wavelength was used; the wavelength of the X-rays was 0.708 and 2.285 Å. It was found that the maximum of the probe characteristic can be located (for both the light and the X-rays) at the cathode, anode, and also between them. The value of the photocurrent at the maximum of the probe characteristic near the cathode is about 10^{-6} - 10^{-8} amp. This is about 4 - 5 orders of magnitude higher than the calculated values. The trapping factor q was estimated ($q = 10^3$). The photocurrent at the anode was also larger than predicted by theory. The

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D407/D301

probe characteristics of a specimen, obtained by excitation with visible light and with X-rays, were in good agreement. The probe characteristics were not affected by scattering of radiation in the crystals. The exciton-diffusion mechanism is discussed. No visible luminescence was observed in the investigated specimens at room temperature. The migration of the excitation energy was considerable in all the specimens. There are 3 figures and 18 references: 5 Soviet-bloc and 13 non-Soviet-bloc. The 4 most recent references to the English-language publications read as follows: W. van Roosbroeck, Bell. Syst. Tech. J., 39, 515, 1960; J. Robinson Robert, J. Brophy James, Physica, 26, 440, 1960; J. Broser, R. Broser-Warminsky, J. Phys. Chem. Solids, 8, 177, 1959; R. E. Halsted, E. F. Apple, J. S. Phener, Phys. Rev., Zet., 2, 420, 1959.

ASSOCIATION: Instytut napivprovidnykiv AN URSR (Institute of Semiconductors of the AS UkrRSR), Kyyiv

SUBMITTED: October 6, 1961

CHALAYA, V.G.

94177

38843

S/185/62/007/006/006/014
D407/D301

AUTHORS: Svyechnikov, S. V. and Chalaya, V. H.

TITLE: Peculiarities of the longitudinal photoconductivity of CdS-type single crystals

PERIODICAL: Ukrayins'kyy fizychnyy zhurnal, v. 7, no. 6, 1962, 623-628

TEXT: The current-voltage and lux-ampere characteristics of the longitudinal photoconductivity of CdS and CdSe single-crystals were investigated, various contacts being used. The contacts were applied to the crystal either by cathode pulverization or by vacuum sublimation. Cd and In were used as ohmic contacts, whereas Ag, Au and Cu were used as non-ohmic contacts. The latter had a filtering effect, causing a shift in the photocurrent maximum towards the longwave side of the spectrum. It was found that CdS single-crystals with filtering contacts are sensitive in a very narrow spectral region, for which the absorption coefficient of CdS is relatively small (less than $10^3 cm^{-1}$). The peculiarities of the CdS-

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Peculiarities of the...

type single crystals can be summed up as follows: 1) A strong dependence of the current-voltage and lux-ampere characteristics on the material of the contact and on the method of its application. 2) Over-linearity of the dark current-voltage characteristics, with a slope exceeding 2; these characteristics become linear by illumination (in the specimens with Ag and Au contacts); this is due to the different dependence of the space charge and of the photocurrent on the voltage; the coefficient of photorectification attains values of up to 10^4 - 10^5. 3) The appearance in the current-voltage characteristics of a strongly pronounced hysteresis, with a relaxation time of tens of seconds; this is due to the formation of a space charge in the crystal and the contacts. 4) Quasi-saturation of the lux-ampere characteristics, whose slope varies from 0.04 - 0.06 at low voltages to 0.2 - 0.3 at high ones (with illumination exceeding 100 lux). The quasi-saturation effect is related to the presence of high-resistance sections in the crystal. 5) The appearance of a photovoltage of the order of 200 - 250 millivolt in specimens with Cu-Cd contacts; this can be ex-

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Peculiarities of the ...

plained by the presence of a high gradient of carrier concentration in the bulk of the crystal, arising as a result of a sharp weakening in illumination. The properties of the longitudinal photoconductivity of CdS single crystals can be used for development of efficient and compact photoresistors of very low voltage, suitable to operate as keys. There are 4 figures.

ASSOCIATION: Instytut fizyky AN UkrRSR, Kyyiv (Institute of Physics of the AS UkrRSR, Kiyev)

SUBMITTED: January 23, 1962

Card 3/3

L 18252-63 EWP(q)/EWT(m)/BDS AFFTC JD

55

ACCESSION NR: AP3002120 S/0185/63/008/006/0664/0668 54

AUTHOR: Chalaya V. G., Svechny*kov S. V.

TITLE: On the equivalent circuit and photocapacitance of longitudinal CdS-photoresistors

SOURCE: Ukrains'kyy fizychnyy zhurnal, v. 8, no. 6, 1963, 664-668

TOPIC TAGS: nonlinear contact, longitudinal photoresistance, capacitance, illumination, barrier layer, leakage current, CdS, CdS photoresistor CdS detector, equivalent circuit.

ABSTRACT: The capacitance of longitudinal CdS photoresistors with non-linear contacts is of considerable magnitude. It depends on voltage applied to the sample and its illumination. Its nature is associated with the presence in the contacts of sections with high resistivity and characteristic dimensions of about 10^{-6} cm. The dependence $C = f(L)$ between the capacitance and illumination was studied. The range of illumination varied from zero to several hundred lux. Within these limits the relationship was linear to first approximation. The authors developed the equivalent circuit of a longitudinal photoresistance. The method of measurements and the actual circuit used are described. The capacitance and leakage

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L 18252-63

ACCESSION NR: AP3002120

of the barrier layer were taken into account. The slope of the C = f(L) characteristic at voltages over one volt is 10^2 pf/lux, and at voltages of the order of 10^{-3} volts it is 10^4 - 10^5 pf/lux. Orig. art. has 5 figures and 4 numbered equations.

ASSOCIATION: Insty*tut Napivprovidny*kiv AN URSR, Kiev
(Institute of Semiconductors of UkrSSR Acad. Sci.)

SUBMITTED: 21 Nov 62 DATE ACQ: 12 Jul 63 ENCL: 00

SUB CODE: PH NO REF SOV: 000 OTHER: 001

Card 2/2

SVECHNIKOV, S.V. [Sviechnykov, S.V.]; CHALAYA, V.G. [Chalaia, V.H.]

Spectral distribution of the X-ray conductivity of CdS single crystals. Ukr. fiz. zhur. 8 no.10:1157-1163 O '63.

Problem of ohmic contacts to photovaristors from CdS single crystals and its analogs. Ibid.:1164-1169 (MIRA 17:1)

1. Institut poluprovodnikov AN UkrSSR, Kiyev.

L 64746-65 EWT(1)/T/EWA(h) IJP(c) AT

ACCESSION NR: AP5015434 UR/0185/65/010/006/0597/0600

AUTHORS: Svyechnykov, S.V. (Svechnikov, S.V.); Chalaya, V. H. (Chalaya, V.G.)

TITLE: Investigation of the phenomenological quantum yield of the x-ray conductivity of CdS

SOURCE: Ukrayins'kyy fizychnyy zhurnal, v. 10, no. 6, 1965, 597-600

TOPIC TAGS: cadmium sulfide, x ray, conductivity, photoconductivity, quantum yield, radiative recombination

ABSTRACT: The quantum yield of the x-ray conductivity and its dependence on various parameters is investigated. The quantum yield was determined from the photocurrent increase following pulsed excitation. The current increase was measured with the aid of measuring amplifiers U2-1A and V6-2, calibrated with a sawtooth voltage. The x-ray source was the monochromatized Kα radiation of a copper

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x-ray tube supplied with rectified, smoothed, and stabilized voltage. The width of the x-ray beam in the plane of the sample was about 0.2 mm. This was also the distance between the electrodes. The number of quanta incident on the sample was determined with an MSTR-5 counter of known efficiency and an RE-1 scaler. The number of quanta absorbed by the crystal was found from its known thickness. The phenomenological photoconductivity quantum yield was measured by the usual method. The sample was illuminated for the same amount of time as with x-rays. The current increase was measured similarly, and the optical wavelength chosen (5100 Å) was close to the photosensitivity maximum of CdS and such that the absorption coefficient was equal to that of 1.54-Å x-rays. On increasing the illumination with visible light the quantum yield of the photocurrent decreases, indicating the simultaneous presence of slow trapping t-levels and s-channel recombination. The quantum yield curve as a function of the x-ray illumination is qualitatively similar. Good correspondence between the light and x-ray yields is also observed in the case of a sample

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000308120002-5"

L 64746-65
ACCESSION NR: AP5015434

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in which recombination s-levels and fast t-levels are present in addition to r-levels. The maximum yield at optimal illumination is 0.30. The absolute values of the measured light and x-ray phenomenological quantum yield are presented. It is concluded that a correlation exists between the photo- and x-ray conductivities, making theoretical results for the former applicable to the latter. Orig. art. has: 3 figures and 1 table.

ASSOCIATION: Institut napivprovidnykiv AN URSR (Institut poluprovodnikov AN UkrSSR] (Institute of Semiconductors, AN UkrSSR)

SUBMITTED: 14Jul64 ENCL: 00 SUB CODE: OP, SS

NR REF SOV: 003 OTHER: 000

Card 3/3

SVECHNIKOV, S.V.; CHALAYA, V.G.

Photoresistors under key conditions. Avtom. i prib. no.2:62-64 Ap-Je '63. (MIRA 18:8)

1. Institut poluprovodnikov AN UkrSSR.

L 8978-66 EWT(l)/EWT(m)/T/EWP(t)/EWP(h)/EWA(c) LIP(c) JD/GG

ACC NR: AP5027428 SOURCE CODE: UR/0181/65/007/011/3413/3415

61

AUTHOR: Svechnikov, S. V.; Chalaya, V. G. 44,55 44,55 B

ORG: Institute of Semiconductors AN UkrSSR, Kiev (Institut poluprovodnikov AN UkrSSR) 44,55

TITLE: Determining the energy of an electron-hole pair and absolute quantum yield for radioconductivity in CdS and CdSe single crystals 27 27 1

SOURCE: Fizika tverdogo tela, v. 7, no. 11, 1965, 3413-3415

TOPIC TAGS: cadmiu ulfide, cadmium selenide, quantum yield, electron hole 21,44,55

ABSTRACT: Single crystals of CdS are exposed to monochromatic Cu-K_α radiation and the true quantum yield of radioconductivity and energy for separation of an electron-hole pair are measured. Data from measurements on thirty specimens show an average quantum yield of $(1.8 \pm 0.06)\cdot 10^3$ electrons per absorbed quantum, and an average pair separation energy of (4.96 ± 0.17) ev. Similar measurements for CdSe gave $(2.1 \pm 0.02)\cdot 10^3$ electrons per absorbed quantum and (4.22 ± 0.02) ev. These values agree satisfactorily with the empirical formula

$$\varepsilon = (E_g + 2.5) \text{ ev}$$

where E_g is the width of the forbidden band, giving ε = 4.9 ev for CdS and 4.2 ev for

Card 1/2 2

L 8978-66

ACC NR: AP5027428

CdSe. Orig. art. has: 5 formulas.

SUB CODE: 20/ SUBM DATE: 17May65/ ORIG REF: 003/ OTH REF: 004

Card 2/2

L 22423-66 EWT(l)/EWT(m)/EWG(m)/T/EWP(t) LJP(c) RDW/JD/LHB/GG
ACCESSION NR: AP6006761 SOURCE CODE: UR/0185/66/011/001/0049/0052

AUTHORS: Svyechnykov, S. V. (Svechnikov, S. V.); Chalaya, V. G. (Chalaya, V. G.)

ORG: Institute of Semiconductors AN UkrSSR (Instytut napivprovidnykiv AN URSR)

TITLE: Measurement of the energy of separation of an electron-hole pair and of the absolute quantum yield of the x-ray conductivity of single crystals of cadmium sulfide and cadmium selenide

SOURCE: Ukrayins'kyy fizychnyy zhurnal, v. 11, no. 1, 1966, 49-52

TOPIC TAGS: cadmium sulfide, cadmium selenide, single crystal, quantum yield, x-ray effect, pair production

ABSTRACT: The authors have determined the absolute quantum yield of x-ray conductivity and the separation energy of an electron-hole pair by comparative measurements of the photo and x-ray conductivity of single crystals of cadmium sulfide and cadmium selenide. In the cadmium sulfide the conductivity was excited by light with a wavelength of 5100 Å and monochromatic copper K_α radiation; in cadmium selenide the wavelength of the exciting light was 7180 Å and monochromatic copper K_α radiation. In each case these wavelengths corresponded to identical absorption coeffi-

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L 22423-66
ACCESSION NR: AP6006761

cients. The setup for measuring the quantum yield of the x-ray conductivity was calibrated in quanta with the aid of a MSTR-5 counter with a known efficiency in the x-ray region, and a standard photocell in the visible region. For CdS the x-ray quantum yield was found to be $(1.8 \pm 0.06) \times 10^3$ electrons per absorbed quantum and the separation energy was found to be 4.96 ± 0.17 ev. For CdSe the obtained values were $(2.1 \pm 0.02) \times 10^3$ and 4.22 ± 0.02 respectively. The separation energies are in good agreement with the empirical formula of K. A. McKay (Phys. Rev. 84, 829, 1951).

SUB CODE: 20/ SUBM DATE: 28Apr65/ ORIG REF: 004/ OTH REF: 003/

Card 2/2

L 20949-66 EWT(m)/EWP(t) IJP(c) JD

ACC NR: AP6006762 SOURCE CODE: UR/0185/66/011/001/0053/0058

AUTHORS: Svyechnykov, S. V. (Svechnikov, S. V.); Chalaya, V. H. (Chalaya, V. G.)

ORG: Semiconductor Institute UkrSSR, Diev (Instytut napivprovidnykiv AN URSR)

TITLE: Investigation of the correlation of the photo- and x-ray sensitivity of single crystals of the cadmium sulfide type

SOURCE: Ukrayins'kyy fizychnyy zhurnal v. 11, no. 1, 1966, 53-58

TOPIC TAGS: cadmium sulfide, cadmium selenide, single crystal, x ray effect, photoconductivity, electric conductivity, absorption coefficient, quantum yield

ABSTRACT: The authors investigated the correlation between the x-ray and photoconductivity of CdS, CdSe, and CdS_xCdSe_{1-x} single crystals. The measurements were performed using monochromatic x rays of wavelength 1.540 Å and visible radiation for which the crystals had equal

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ACC NR: AP6006762

absorption coefficients. For CdS this corresponds to visible radiation with a wavelength 5100 Å, and for CdSe to 7180 Å. The points of a plot of the stationary x-ray sensitivity as a function of the stationary photosensitivity fall close to a straight line, indicating correlation between the sensitivities. A similar plot obtained in measurements using the continuous x-ray and visible spectra resulted in a great scatter of points. This is interpreted as not being due to the absence of correlation, but rather to the inadequate conditions of excitation of CdS and CdSe single crystals when using the continuous spectra. A comparison between the phenomenological quantum yields of the photo- and x-ray conductivity of Cds and CdSe single crystals indicates that good agreement exists between the values of the quantum yields of the photocurrent and the x-ray conductivity, giving rise to the correlation of the stationary sensitivities. Orig. art. has: 2 figures and 2 tables.

SUB CODE: 20/ SUBM DATE: 20Mar65/ ORIG REF: 009/ OTH REF: 006

Card 2/2 mjs

CHALAYA, Z.

BARABANOV, A.; CHALAYA, Z.

Use of horn and hoof "plastics." Prom.koop. no.7:22-23 Jl '57. (MLRA 10:8)

1.Direktor Chornovitskoy pugovichnoy fabriki (for Barabanov).
2.Nachal'nik otdeleniya tekhnicheskogo kontrolya Chernovitskoy pugovichnoy fabriki (for Chalaya).
(Horns) (Buttons)

CHALAYA, Zinaida Akimovna; POMERANTSEVA, G., redaktor; PLESHKO, V. redaktor; BODROV, A., tekhnicheskiy redaktor.

[Serov, the aviator; a biographical narrative] Letchik Serov; biograficheskaia povest'. Moskva, Izd-vo TsK VLKSM "Molodaia gvardiia", 1955. 213 p. (MLRA 8:10)
(Serov, Anatolii Konstantinovich, 1910-1939)

BABKO, A.K.; CHALAYA, Z.I.

Fluorescence method used in the determination of microamounts of metals in the form of compounds of metalthiocyanate (halide) with a basic dye. Report No.1: Determination of zinc by the fluorescence quenching of aqueous solution of rhodamine C. Zhur.anal.khim. 16 no.3:268-271 My-Je '61. (MIRA 14:6)

1. T. G. Shevchenko Kiev State University.
(Zinc —Analysis)
(Rhodamine)
(Fluorescence)

L 10619-63
EWT(m)/BDS--ESD-3--RM

ACCESSION NR: AP3001018

S/0075/63/018/005/0570/0574

53

AUTHOR: Babko, A. K.; Chalaya, Z. I.

TITLE: The study of rhodamine C as a fluorescent reagent for indium

SOURCE: Zhurnal analiticheskoy khimii, v. 18, no. 5, 1963, 570-574

TOPIC TAGS: rhodamine C, determination of indium, fluorescence of benzene extracts

ABSTRACT: Rhodamine C is the best reagent for the extraction-luminescent determination of indium in the form of a bromide complex. For the determinations of indium by the fluorescence of benzene extracts the optimum conditions are as follows: sulfuric acid 3 to 6N and 2N potassium bromide. The use of hydrochloric acid is not suitable. Addition of acetone and some other solvents to the aqueous solution before the extraction of rhodamine C brominidate increase the solubility of the indium complex and does not appreciably effect the solubility of the indium complex and does not appreciably effect the solubility of rhodamine bromide. Under this optimum condition the sensitivity of the determination is 5 times higher and the results are more reproducible. Orig. art. has: 1 table and 9 graphs.

Card 1/2

BABKO, A.K.; CHALAYA, Z.I.

Study of rhodamine C as a fluorescent reagent for indium. Zhur. anal. khim. 18 no.5:570-574 My'63. (MIRA 17:2)

BABKO, A.K.; CHALAYA, Z.I.

Dyes of the rhodamine group as luminescent reagents for boron. Ukr. khim. zhur. 30 no.3:268-274 '64.
(MIRA 17:10)

1. Kiyevskiy gosudarstvennyy universitet im. T.G. Shevchenko.

BABKO, A.K.; CHALAYA, Z.I.; VORONOVA, E.D.

Luminescence method of determining boron in alkaline media using ion-exchange resins. Zav. lab. 31 no.2:157-159 '65. (MIRA 18:7)

1. Institut obshchey i neorganicheskoy khimii AN UkrSSR.

L 08661-67 EWT(m)/EWP(t)/ETI IJP(c) JD

ACC NR: AP6010054 SOURCE CODE: UR/0032/66/032/003/0270/0273

AUTHOR: Babko, A. K.; Chalaya, Z. I.; Mikitchenko, V. F. 16

ORG: none 67

TITLE: Microdetermination of arsenic by butylrhodamine

SOURCE: Zavodskaya laboratoriya, v. 32, no. 3, 1966, 270-273

TOPIC TAGS: arsenic, microchemical analysis

ABSTRACT: The method is based on the formation of an arsenic molybdenum complex with butylrhodamine and is used for the determination of As in NaCl. Ten grams NaCl is dissolved in 35 ml water, heated to 40-45C, and acidified with 5 ml 8N H_2SO_4. The arsenic(V) is reduced to arsenic(III) by 1.5 ml 20% KI and 1 ml fresh solution of ascorbic acid. The cooled mixture is extracted by two 5 ml fractions of 1% diethyldithiocarbamic acid in $CHCl_3$. The extracts are collected and washed two times with 2.5 ml 1n H_2SO_4, mixed with 2.5 ml water and the $CHCl_3$ is evaporated on a steam bath. A 2 ml is added to the residue and the mixture is evaporated to dryness. The dry residue is dissolved in 1.5 ml 8N H_2SO_4, and then mixed with 1.3 ml 0.01 N ammonium molybdate and 0.3 ml 0.02% butylrhodamine solution. After 10 minutes the solution is extracted by 7 ml ethyl ether, the extracts are washed with H_2O, mixed with acetone, and the density of its color is compared with that of standard solutions. The optimal conditions for the

Card 1/2 UDC: 543.7

ACC NR: AP6010054

determination are: 4×10^{-4} M Mo and 3×10^{-6} M butylrhodamine for 5×10^{-7} M As present, and 0.04-0.05 γ As in 7 ml of ether extracts. The sensitivity of the determination is 0.1 γ As per 35 ml NaCl solution. Orig. art. has: 4 fig. and 1 table.

SUB CODE: 07/ SUBM DATE: none/ ORIG REF: 008/ OTH REF: 004

CHALBAYU, Ya.

Review. Gas. prom. 4 no.7:56 Jl '59. (MIRA 12:10)
(Gas governors)

SHAMSUTDINOV, Z.; CHALBASH, B.

Water regimen of wormwood, sedge, and meadow grass in the Karnabchul' area of Uzbekistan. Uzb. biol. zhur. no.5:25-27 '60. (MIRA 13:11)

1. Institut karakulevodstva Uzbekskoy Akademii sel'skokhozyaystvennykh nauk.
(Karnabchul' Steppe--Plants, Effect of aridity on)

GLAZUNOV, S.I.; CHALBYSHEV, M.M., redaktor; KRASNAYA, A.K., tekhnicheskiy redaktor

[Practical manual for the boatswain on steam and motor ships] Prakticheskoe posobie botsmanu gruzo-passazhirskogo paroteplokhoda. Moskva, Izd-vo Ministerstva rechnogo flota SSSR, 1951. 105 p. (MLRA 7:10)
[Microfilm]
(Navigation)

CHALDEK, J.

J. Havelka's Konservarenske stroje a vyrobni linky v potravinarskem prumyslu (Preserving Machinery and Production Lines in the Food Industry); a book review. p. 501

PRUMYSL POTRAVIN. (Ministerstvo potravarskyho prumyslu) Praha, Czechoslovakia. Vol. 9, no. 9, Sept. 1958

Monthly List of East European Accessions (EEAI), LV, Vol. 8, no.7, July 1959
Uncl.

AVTONOMOV, B.V.; BONDAREV, I.I.; BORISENKO, P.I.; BURLAKA, S.A.; VESELOV, N.D.; ZUBANOV, K.V.; KLIMENKO, G.A.; KOTILEVSKIY, D.G.; KUDISH, A.D.; LAVRENENKO, K.D.; MALYUTIN, N.P.; MARINOV, A.M.; MOLOKANOV, S.I.; PLOGATYREV, A.A.; POBEGAYLO, K.M.; POGAYEVSKIY, V.L.; SAVINYKH, A.I.; SAPOZHNIKOV, F.V.; SERDYUKOV, N.P.; FINOGENOV, Ya.I.; CHALDRANYAN, V.P.; CHULKOV, Ye.I.; SHANIN, V.P.; SHISHOV, V.V.

Ivan Konstantinovich Khivrenko; obituary. Elek.sta. 34 no.2:96 F '63. (MIRA 16:4)

(Khivrenko, Ivan Konstantinovich, 1899-1962)

PONOMAREVA, V.A., mladshiy nauchnyy sotrudnik; CHALDYK, V.A.

Sanitation of a farm afflicted with hog cholera for a long time. Veterinariia 40 no.6:41-42 Je '63. (MIRA 17:1)

1. Kustanayskaya nauchno-issledovatel'skaya veterinarnaya stantsiya. 2. Direktor Kustanayskoy nauchno-issledovatel'skoy veterinarnoy stantsii (for Chaldyk).

CHALDYMOV, A.K. kand.arkhitektury

Problems in designing new types of schoolhouses. Izv. ASIA no.2:57-68 '60. (MIRA 13:7)
(Schoolhouses)

CHALDYSHEV, V. A.,

"The energetic spectrum on the basis of a lattice model in connection with the sphalerite lattice"

Report presented at a Conference on Solid Dielectrics and Semiconductors, Tomsk Polytechnical Inst., 3-8 Feb. 58.
(Elektrichestvo, '58, No. 7, 83-86)

SOV/139-58-5-13/35

AUTHOR: Chaldyshev, V. A.

TITLE: Application of the Network Model to Investigation of Energy Spectrum of Electrons and (Positive) Holes in Crystals with Zincblende Type Lattice (Primeneniye setochnoy modeli dlya issledovaniya energeticheskogo spektra elektronov i dyrok v kristallakh s reshetkoy tipa tsinkovoy obmanki)

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, fizika, 1958, Nr 5, pp 65-69 (USSR)

ABSTRACT: The free-electron model of a conjugated molecule is extended to apply to zincblende type lattices. When each conduction electron is allowed to move freely along the set of one-dimensional lines (i.e. bonds) joining adjacent atoms a band structure appears. Such a model is called by Coulson (Refs.1, 2) the free-electron network model, and has been applied by him to metals. The extension to zincblende type lattices having types of atoms of different radii r_1 and r_2 requires the formulation of a lattice potential $v(x)$

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Application of the Network Model to Investigation of Energy Spectrum of Electrons and (Positive) Holes in Crystals with Zincblende Type Lattice

which has values $-v_1$ or 0 or $-v_2$ according to whether $x < r_1$, or $r_1 < x < l - r_2$, or $x > l - r_2$, where l is the bond length. A Fourier analysis of the network wave function leads to the following typical propagation equation:

$$4\left(\cos \varkappa l - \frac{p_1}{\varkappa l} \sin \varkappa l\right)\left(\cos \varkappa l - \frac{p_2}{\varkappa l} \sin \varkappa l\right) =$$

$$= 1 + \cos k_x a \cos k_y a + \cos k_x a \cos k_z a + \cos k_y a \cos k_z a \quad (3)$$

Here $\varkappa^2 = \frac{2mE}{h^2}$, where m, E are the electronic mass and energy respectively and h is Planck's constant; a is the dimension of the unit cell; $\varkappa_x$, $\varkappa_y$, $\varkappa_z$ are the components of the wave vector; and p_1, p_2 are given by:

$p_1 = \frac{2m}{h^2} v_1 r_1 l$; $p_2 = \frac{2m}{h^2} v_2 r_2 l$. From this it follows

Application of the Network Model to Investigation of Energy Spectrum of Electrons and (Positive) Holes in Crystals with Zincblende Type Lattice

that the equivalent mass m^* of the 'network-electron', i.e. that which obeys a simple Schrödinger-type equation, is given by the following:

$$m^* = 3 \frac{p_1 + p_2 - \frac{p_1 p_2}{x^2} + 1 \quad \sin^2 x}{x^2} m_0 \qquad (5)$$

Finally, the validity of the model in the region of nuclei is examined and it is shown that allowance for the strong electron attraction towards the nuclei can be made by inserting delta-function potential wells at these points. The paper

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contains no tables or diagrams; 4 references are given, of which 2 are English and 2 Soviet. The work was first reported at the Conference of Higher Educational Establishments on Dielectrics and Semiconductors, Tomsk, February 1958.

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Symmetry properties of energy zones in crystals with the chalcopyrite structure. Izv.vys.ucheb.zav.;fiz. no.2:173-181 '60.
(MIRA 13:8)

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AUTHOR: Chaldyshev, V.A.

TITLE: Symmetry Properties of the Schrodinger-Pauli Equation for an Electron in a Crystal

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Fizika, 1960, No.6, pp.93-101

TEXT: Johnston (Ref.1) has pointed out the absence of a consecutive derivation of the group-theoretic formalism used in studying the energy spectrum in the band theory of solids in the presence of spin-orbit interactions. Johnston discusses this formalism on the basis of the Dirac equation. The present author shows that this formalism can be based on the symmetry properties of the Schrödinger-Pauli equation. The latter equation is taken in the form

Eq. (2.1)

$$\left\{-\frac{\hbar^2}{2m}\frac{\partial^2}{\partial x_\mu \partial x_\mu}+V(r)-\frac{i\hbar^2}{4m^2c^2}e_{\mu\nu\sigma}\frac{\partial V(r)}{\partial x_\nu}\frac{\partial}{\partial x_\sigma}\right\}\Psi=E\Psi. \qquad (2.1)$$

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