

SIMANOVSKIY, M.A., kand. ekon. nauk

Transportation of refractory materials. Trudy TSNII MPS  
no.162:39-69 '58. (MIRA 12:4)  
(Refractory materials--Transportation)

SIMANOVSKIY, M.A., kand. ekon. nauk

Improving the transportation of cotton. Trudy TSNII MPS  
no.162:109-137 '58. (MIRA 12:4)  
(Cotton--Transportation)

KRICH, I.V., inzh.; SIMANOVSKIY, I.M., kand.ekon.nauk; KUZNETZ, G.F., otv.  
za vypusk; POBKOVA, Ye.M., kand.tekhn.nauk

Brief instructions on organization and planning methods for routing  
normal freight traffic flows. Inform.list.Glav.gruz.upr. no.15:  
4-39 '59. (MIRA 14:5)

1. Glavnoye gruzovoye upravleniye Ministerstva putey soobshcheniya  
(for Krich). 2. Vsesoyuznyy nauchno-issledovatel'skiy institut  
zheleznodorozhnogo transporta Ministerstva putey soobshcheniya  
(for Simanovskiy).  
(Railroads--Traffic) (Railroads--Freight)

SIMANOVSKIY, M.A. (Karaganda, ul. Amangel'dy, d. 11-B)

Cancer originating from rectal ulcer. Vop. onk. 5 no.1:117-119  
'59. (MIRA 12:3)

1. Iz patologoanatomicheskogo otdeleniya (zav. - M.A. Simanovskiy)  
Karagandinskoy gorodskoy bol'nitsy No.4 (glavnyy vrach - A. Ya.  
Demidova).

(RECTUM, ulcer,  
adenocarcinomatous degen. (Rus))

(RECTUM, neoplasms,  
adenocarcinomatous degen. of ulcer (Rus))

SIMANOVSKIY, M.A.

Congenital mediastinal cyst as a cause of death in the newborn.  
Akush. i gin. 35 no.1:104-107 Ja-F '59. (MIRA 12:2)

1. Iz roditel'nogo doma No.2 (glavnyy vrach M.A. Elovskiy) i pato-  
logoanatomicheskogo otdeleniya (zav. M.A. Simanovskiy) gorodskoy  
bol'nitsy No.4 (glavnyy vrach A.Ya. Demidova) Karaganda.

(INFANT, NEWBORN, dis.)

mediastinal cyst, fatal (Rus))

(MEDIASTINUM, cysts,  
congen. in newborn, fatal (Rus))

ABRAMOV, A.P., kand. ekon. nauk; BARKOV, N.N., kand. ekon. nauk;  
SIMANOVSKIY, M.A., kand. ekon. nauk

Economic evaluation of measures for a greater efficiency of  
transportation. Zhel. dor. transp. 41 no.10:16-20 0 '59.  
(MIRA 13:2)

(Railroads--Freight)

BARKOV, N.N.; SIMANOVSKIY, M.A.; KOLTUNOVA, M.P., red.; MEDVEDEVA, M.A.,  
tekh.n.red.

[Problems pertaining to methods for a more efficient operation of  
freight transportation] Metodicheskie voprosy ratsionalizatsii  
perevozok. Moskva, Vses.izd-ko poligr. ob'edinenie n-va putei  
soob., 1960. 139 p. (Moscow. Vsesoiuznyi nauchno-issledovatel'skii  
institut zheleznodorozhnogo transporta. Trudy, no.194).

(MIRA 13:10)

(Railroads--Freight)

SIMANOVSKIY, M.A., mladshiy nauchnyy sotrudnik

Development of an experimental tuberculous focus in the skeletal muscle of the cat and the effect on it of a ganglioblocking substance. K izuch. roli nerv. sist. v pat., immun. i lech. tub. no. 2:219-228 '61. (MIRA 15:10)

1. Iz laboratorii eksperimental'noy patologii i terapii (zav. - G.S.Kan) Leningradskogo nauchno-issledovatel'skogo instituta tuberkuleza.

(MUSCLES--TUBERCULOSIS) (HEXONIUM)



ABRAMOV, A. P., kand. ekonom. nauk; SIMANOVSKIY, M. A., kand. ekonom. nauk; TRUBIKHIN, M. G., kand. ekonom. nauk; FLEISHMAN, F. M., kand. ekonom. nauk

Ways of improving the planning and material incentive in railroad management. Zhel. dor. transp. 45 no.1:55-60 Ja '63.  
(MIRA 16:4)

(Railroads—Management)

SIMANOVSKIY, M.L.; STESHIN, Ye.A.

Making an actual shaft layout in boring inclined-level holes.  
Podzem.gaz.ugl. no.2:56-58 '59. (MIRA 12:9)

1. Podmoskovnaya stantsiya "Podzemgaz".  
(Mine surveying) (Boring)

GIBSHOVICH, N.G.; SIMANOVSKIY, M.N.

Brittleness in high-strength cast iron. Lit.proizv. no.8:12-14  
N '54. (MLBA 8:1)  
(Cast iron)

SIMANOVSKIY, M. P.

SECRET

✓ Appearance of Brittleness in High-Strength Irons. N. G. Gurbovich and M. P. Simanovskii. (*Litinskiy Proizvodstvo*, 1961, (8), 12-14). [In Russian]. An account is given of the investigation of the appearance of brittleness in high-strength iron castings, analogous to temper-brittleness in steel. Preliminary experiments were made to find the effect of temperature on impact strength from 30° to 800° C. Subsequently the effect of heating on toughness of ferritic high-strength iron was studied over a wide temperature range (100-850° C.) with soaking at the heating temperature for 1 and 10 hr. followed by air cooling. Cooling was carried out at various rates, and the best effects were obtained with rapid cooling from temperatures of about 700-750° C.—a. n.

M.P. Simanovskii

① J.P.

SIMANOVSKIY, Mikhail Petrovich; BARANOV, I.A., inzh., red.; FREGER,  
D.P., tekhn.red.

[Toughness of cast iron and ways to increase it; stenographic  
record of a lecture given at the Leningrad House of Scientific  
and Technical Propaganda, at a seminar on making iron castings]  
Udarnaya viszkost' chuguna i sposoby ee povysheniia; steno-  
gramma lektsii, pročitannoi v LDNTP na seminare po proizvodstvu  
chugunnykh otlivok. Leningrad, Leningr.dom nauchno-tekhn.pro-  
pagandy, 1958. 37 p. (MIRA 12:11)  
(Cast iron)

NEKHEMDZI, Yu.A.; GIRSHOVICH, N.G.; GRUZHNYKH, I.V.; BILYKH, V.Ya.;  
KUPISOV, I.V.; SIPANOVSKIY, M.P.; ANTIPOV, M.V.

Foundry properties of heat-resistant alloys. Issl. po zharopr.  
splav. 6:308-313 '60. (MIRA 13:9)  
(Heat-resistant alloys) (Founding)

GIRSHOVICH, N.G.; SIMANOVSKIY, M.P.

Bending of castings during cooling in the mold. Lit. proizv.  
no.2:22-26 F '63. (MIRA 16:3)  
(Metal castings--Defects) (Thermal stresses)

ACCESSION NR: AT4037530

S/2563/63/000/224/0133/0141

AUTHOR: Simanovskiy, M. P.

TITLE: Heat stresses in heat resistant alloy castings

SOURCE: Leningrad. Politekhicheskiy institut. Trudy\*, no. 224, 1963. Liteyny\*ye svoystva zharoprochny\*kh splavov (Castability of heat-resistant alloys), 133-141

TOPIC TAGS: castability, heat resistant alloy, iron based alloy, nickel based alloy, Nichrome alloy, austenitic steel, high alloyed steel, alloy composition, alloy No. 3, alloy No. 6, alloy No. 300, alloy Kh1, alloy Kh32, alloy 111, alloy LA3, alloy EI612, heat stress analysis, shrinkage grid procedure, residual stress analysis, elasticity modulus measurement

ABSTRACT: The shrinkage grid procedure (see Fig. 1 in the Enclosure) was employed to study zonal residual stresses in castings of basic systems and commercial alloys (see Nekhendzi, Yu. A., p. 9-23, this same book, for all compositions), as part of an experimental series on the castability of heat resistant alloys. Results are tabulated and indicate that addition of an initial 20% Ni to the Fe-Cr-C basic system decreases the modulus of normal elasticity  $E$  from  $19.0$  to  $15.0 \text{ kg/mm}^2 \cdot 10^{-3}$  for 0.12% C. Further addition of Ni reverses the effect ( $17.6 \text{ kg/mm}^2 \cdot 10^{-3}$  at 80% Ni). A similar pattern occurs for 0.35% C

Card 1/3



ACCESSION NR: AT4037530

(18.9 to 15.1, then back to 18.0, respectively). Residual stresses increase as Ni rises especially for the range 40 to 80% Ni. Variation in C from 0.12 to 0.35% had little effect. E is not affected by addition of Mo, Co, W or Ti, but Al and Nb reduce it. Residual stresses initially increase when Mo, Co and Al are added (i.e., 5%), then dip to original levels as alloying element content is increased. Addition of W increases residual stresses, Nb and Ti reduce it. The two characteristics are relatively similar for all Fe-based commercial alloys, but higher than in Fe-C systems. They decrease in Ni-based commercial systems as degree of alloying increases, and are lower for No. 6 than for No. 3. Variation in stresses for all studied alloys was found to be analogous to variation of the product  $E\Delta t\bar{\alpha}$ . Orig. art. has: 3 tables, 4 graphs and 5 figures.

ASSOCIATION: Leningradskiy politekhnicheskyy institut im. M.I. Kalinina (Leningrad Polytechnical Institute)

SUBMITTED: 00

DATE ACQ: 04Jun64

ENCL: 01

SUB CODE: MM

NO REF SOV: 006

OTHER: 000

Card 2/3

ACCESSION NR: AT4037530

ENCLOSURE: 01

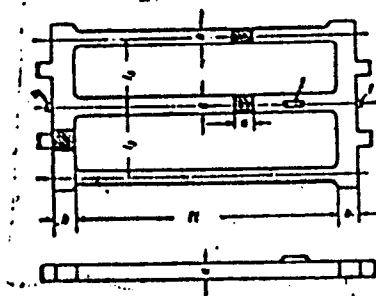


Fig. 1. Diagram of a grid for measuring residual stresses.  $21 = 400$  mm,  $13 = 75$  mm,  $aa = 30 \times 30$  mm,  $ab = 30 \times 20$  mm,  $ah = 30 \times 40$  mm, 1 and 2 — measurement lugs

Card 3/3

ACCESSION NR: AT4037529

5/2563/63/000/224/0124/0132

AUTHOR: Simanovskiy, M. P.

TITLE: Linear shrinkage of heat resistant alloys

SOURCE: Leningrad. Politekhicheskiy institut. Trudy\*, no. 224, 1964. Liteyny\*ye svoystva zharoprochny\*kh splavov (Castability of heat-resistant alloys), 124-132

TOPIC TAGS: castability, heat resistant alloy, iron based alloy, nickel based alloy, austenitic steel, high alloy steel, alloy composition, alloy No. 3, alloy No. 6, alloy No. 300, alloy Kh1, alloy Kh32, alloy 111, alloy LA3, alloy EI612, alloy linear shrinkage, alloy preshrinkage expansion, alloy shrinkage tester, alloy shrinkage measurement, carbon steel 12, carbon steel 35, shrinkage

ABSTRACT: Linear shrinkage in various basic systems and commercial alloys (see Nekhendzi, Yu. A., p. 9-23, this same book, for all compositions) was measured on special equipment and compared to that in carbon steels 12 and 35, as part of an experimental series on the castability of heat resistant alloys, to determine the effect of Ni, C or alloying element content. The shrinkage process is illustrated (see Fig. 1 in the Enclosure). It was found that linear shrinkage is greater in basic systems than in carbon steels. It peaks at 2.65% for alloy 12/20/20, drops back gradually to 2.30% as Ni content increases to 60%

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ACCESSION NR: AT4037529

and remains unchanged for 80% Ni. An increase in C reduces shrinkage for the carbon steels or studied alloys. Preshrinkage expansion peaks at 40% Ni for 0.12 or 0.35% C in basic systems containing 20% Cr and varying amounts of Ni. It increases with C content in all such alloys. Addition of alloying elements to basic alloy 12/20/80 gradually decreases linear shrinkage and increases preshrinkage expansion. Slight exceptions to this pattern are described. Linear shrinkage is higher in commercial Fe-based alloys (2.15 to 2.40%) than in comparable carbon steels (2.10 to 2.25%) or Ni-based alloys (2.1 to 2.2%). The respective basic systems have higher shrinkage characteristics. Preshrinkage expansion was higher in all commercial alloys (0.030 to 0.055% for Fe-based and 0.035 to 0.045% for Ni-based) than in basic systems or carbon steels. Orig. art. has: 7 graphs and 3 tables.

ASSOCIATION: Leningradskiy politekhnicheskoy institut im. M. I. Kalinina (Leningrad Polytechnical Institute)

SUBMITTED: 00

DATE ACQ: 04Jun64

ENCL: 01

SUB CODE: MM

NO REF SOV: 004

OTHER: 000

Card 2/3

MB

ACCESSION NR: AT4037529

ENCLOSURE: 01

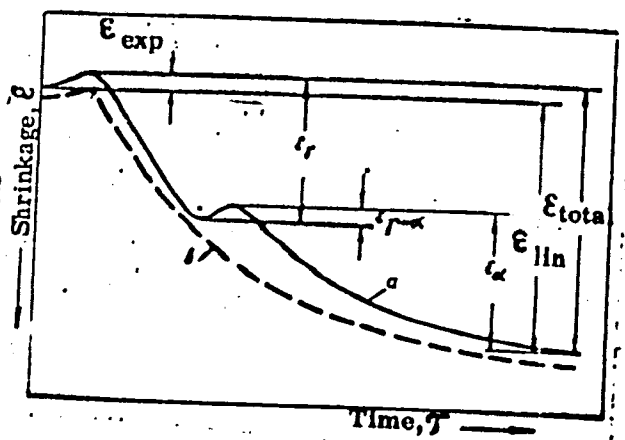


Fig. 1. Stages of linear expansion (schematic): a — carbon steel, b — heat resistant alloy

Card 3/3

MITROFANOV, Sergey Petrovich, kand.tekhn.nauk; ANSEROV, M.A., nauchnyy red.; SIMANOVSKIY, N.Z., red.; MALYAVKO, P.I., red.; SMIRNOV, P.S., tekhn.red.

[Scientific bases of the group technology] Nauchnye osnovy gruppovoi tekhnologii. Leningrad, Lenizdat, 1959. 434 p.  
(MIRA 12:8)

(Mechanical engineering)

SIMANOVSKIY, P., inzh.

Methods for finishing large-sized wall blocks. Stroitel' no.12:24  
D '57. (MIRA 11:2)

(Concrete blocks)

SIMANOVSKIY, P.S.

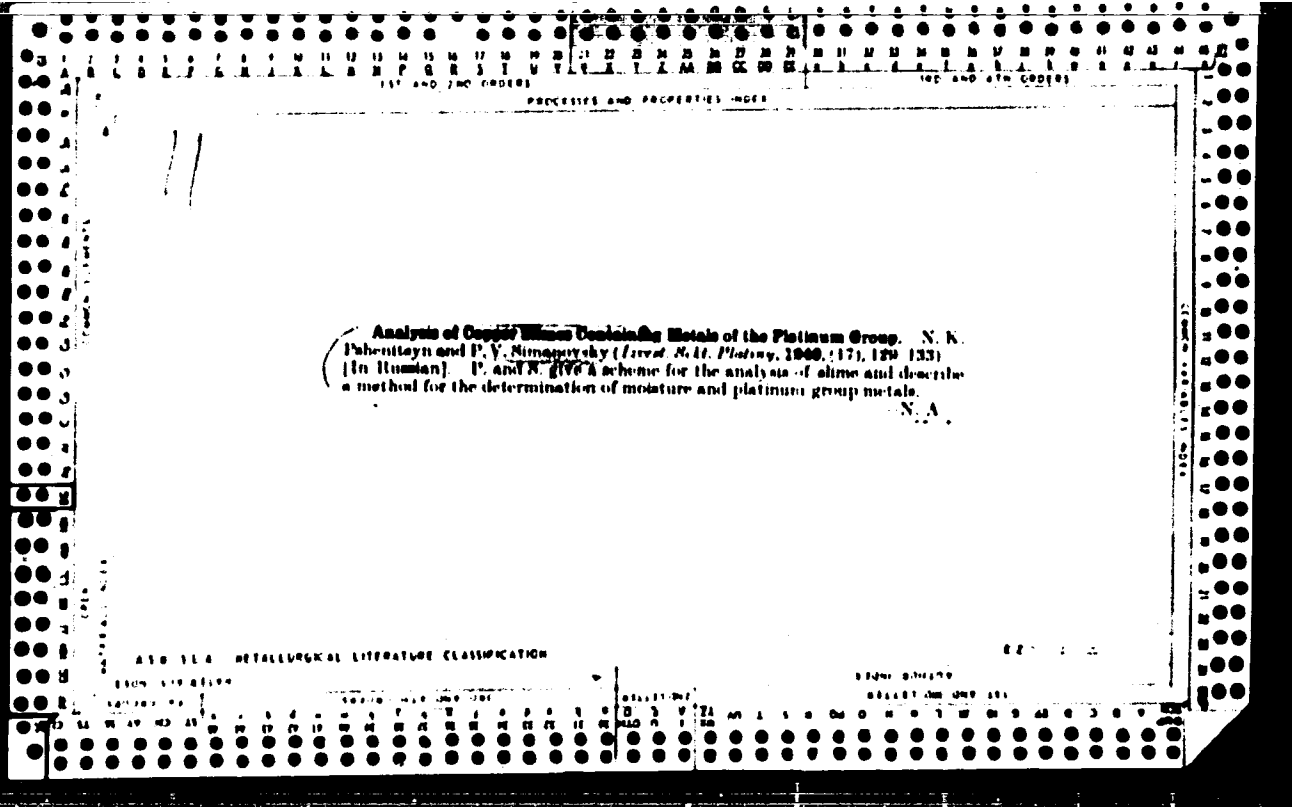
Shortened period for steaming reinforced concrete and mosaic construction details of small dimension. Rats. i isobr. predl. v stroi no.66: 14-15 '53. (MIRA 7:9)  
(Reinforced concrete)

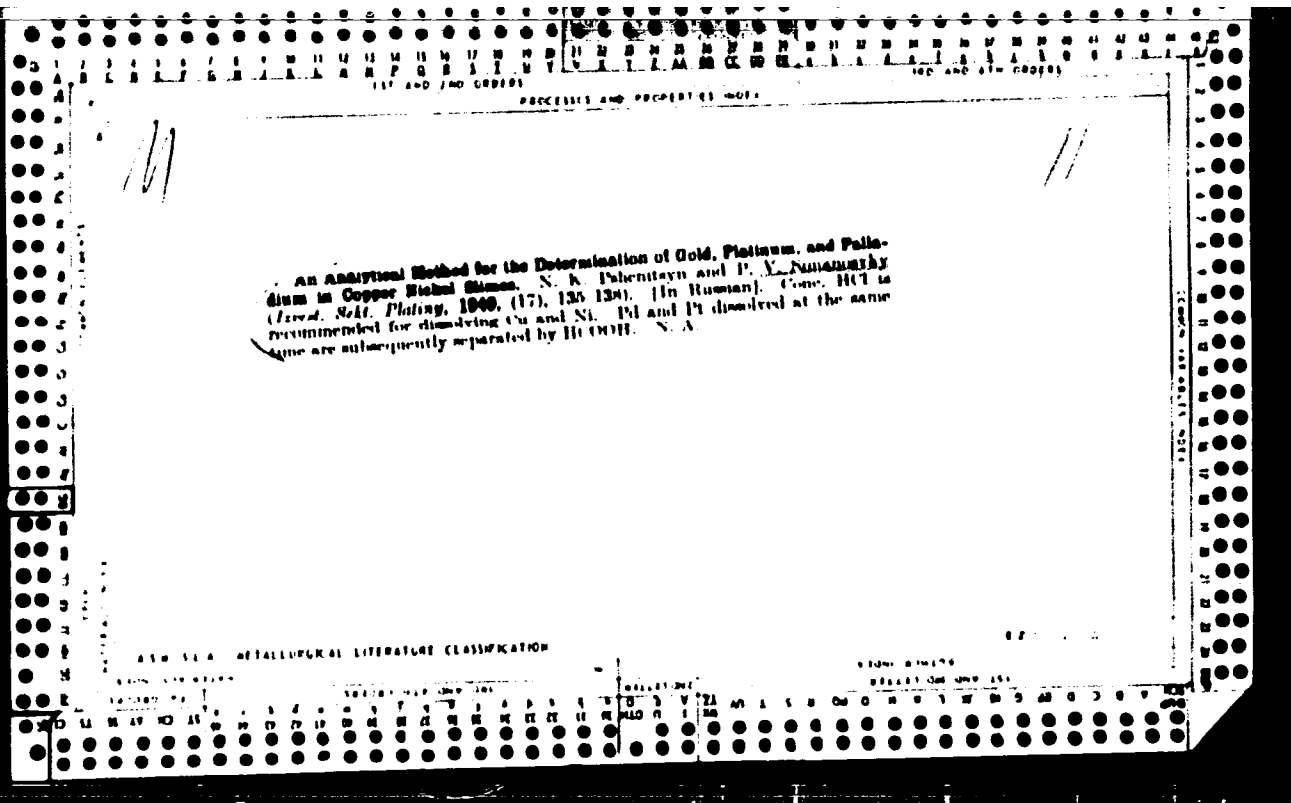


SIMANOVSKIY, P.S., inzh.

Using ornamental concretes and mixtures in finishing buildings.  
Biul. stroi. tekhn. 12 no.5:9-10 My '55. (MIRA 11:12)  
(Decoration and ornament, Architectural)  
(Concrete)

Compounds of Iridium with acetonitrile. V. V. Lelchuk  
skii and P. V. Samonoy, *Dokl. Akad. Nauk SSSR, Ser. Chem. Sci.* (U. S. S. R.) No. 10, 610 (1969). When 1 g  
(NH<sub>4</sub>)<sub>2</sub>IrCl<sub>6</sub>·H<sub>2</sub>O is boiled 5 min. with 2 g. NH<sub>4</sub>Cl and 1  
cc. MeCN, and the soln. cooled, 80% (NH<sub>4</sub>)<sub>2</sub>IrMeCN·  
Cl<sub>2</sub>·H<sub>2</sub>O is obtained. By double decomposition, this forms  
the corresponding K, [Pt(NH<sub>3</sub>)<sub>4</sub>] and gadolinium salts.  
Not more than 1 MeCN can be introduced into the mol.  
even by prolonged boiling. H. M. Leicester





Compounds of palladium with acetonitrile. V. V. Lebedinskiĭ, P. V. Simanovskii, and O. D. Slutsker. *Izv. Sektora Prikladnoi Biokhimiĭ i Biologii Akad. Nauk S.S.S.R.*, No. 21, 43-68 (1948).—(NH<sub>4</sub>)<sub>2</sub>PdCl<sub>6</sub> was treated with CH<sub>3</sub>CN. The product found was [Pd(CH<sub>3</sub>CN)<sub>4</sub>Cl<sub>2</sub>]. The speed of the reaction depended on the amt. of acetonitrile used. When the CH<sub>3</sub>CN: Pd mol ratio was 1:1, it took a day for the product to appear; by taking a 10-12:1 ratio, the product appeared practically instantaneously. Attempts at sepg. the monoacetonitrile from the mother liquor of the diacetonitrile were unsuccessful. In 1:1 HCl, the diacetonitrile split off both mols. of CH<sub>3</sub>CN yielding [PdCl<sub>4</sub>]<sup>2-</sup>. Boiled in NH<sub>4</sub>OH the diacetonitrile yielded [Pd(NH<sub>3</sub>)<sub>4</sub>]<sup>2+</sup>. M. Hosh

SIMANOVSKIY, S.M.

C1 the psychiatric department of the municipal hospital; the  
second municipal hospital in Voroshilovgrad. Zhur. nevr. i  
psikh. 54 no.7:606-607 J1 '54. (MLRA 7:7)  
(VOROSHILOVGRAD--HOSPITALS, PSYCHIATRIC)  
(HOSPITALS, PSYCHIATRIC--VOROSHILOVGRAD)

SHANOV KIV, S.M.

Accelerated treatment of alcoholism. Vrach.delo no.6:613-616  
Ja '58 (MIRA 11:7)

1. Psikhiatricheskaya otdeleniye Vtoroy Luganskoy gorodskoy bol'nitsy.  
(ALCOHOLISM-TREATMENT)

СирАА.Ваша; С. К., Конрад и др -- (рус) "Психиатрическая дивизионная форма организации психоневрологических госпиталей как одна из форм организации психоневрологической помощи." Ленинград, 1960. 10 пп; (State Order of Lenin list for Advanced Treatise of Physicians in S. K. Kirov); 220 copies; price not given: (P., 24-05, 156)



LISITSYN, A.A.; KLEMCHENKO, I Z.; PEROV, P.A.; SIMANOVSEIY, V.L.

Dynamics of the number of susliks in areas under rodent control  
in the plague focus of the northwestern Caspian Sea region.  
Sbor. nauch. rab. Elist. protivochum. sta. no. 1:155-165 '59.  
(MIRA 13:10)

(CASPIAN SEA REGION--SUSLIKS) (RODENT CONTROL)  
(PLAGUE)

PETROV, P.A.; PAVLOV, V.D.; SIMANOVSKIY, V.L.

Development of animal groupings on dried northwestern shore  
of the Caspian Sea. Zool. zhur. 42 no.7:1080-1087 '63.  
(MIRA 17:2)

1. Yandykov Anti-Plague Department of the Astrakhan Anti-  
Plague Station, Ministry of Public Health of U.S.S.R.

PAK, I.F.; SIMANOVSKIY, V.N.

Results of the work of the open-door ward. Zhur. nevr. 1.  
psikh. 65 no.3:476 '65. (MIRA 18:4)

1. Gor'kovskaya oblastnaya psikhiatricheskaya bol'nitsa No.1  
(glavnyy vrach V.I. Kopnin).

BONDAR', V.P.; KABANOV, V.M.; SIMANOVSKIY, Yu.S.

Miniature transformer torque transducer. Izm. tekhn. no.9:  
23-24 S '63. (MIRA 17:1)

GALYATIN, V.M.; KALINSKIY, D.N.; Primali uchastiye: KUROCHKIN, I.F.;  
DUVANOV, A.I.; SOLOV'YEV, Yu.F.; GERASIMOV, Yu.V.; GROVAL'D, V.G.;  
SHASHKOV, V.N.; VOLKOV, A.A.; ZHILKO, E.I.; MITROPOL'SKIY, Yu.I.;  
FEDOSEYEV, S.V.; GONCHAROV, F.I., <sup>1</sup>rabotnik; SHEMETOV, P.Ye.,  
rabotnik; CHUPRINA, I.A., <sup>2</sup>rabotnik; DEMIN, P.Ye., <sup>3</sup>rabotnik;  
GONCHARENKO, P.V., <sup>4</sup>rabotnik; SIMANYUK, G.N., <sup>5</sup>rabotnik

Investigating power and technological parameters of rolling on the  
2350 medium sheet mill. [Sbor. trud.] TSNIICHM no.29:138-148  
'63. (MIRA 17:4)

1. Sotrudniki Tsentral'nogo nauchno-issledovatel'skogo instituta  
chernoy metallurgii (for Gerasimov, Grosval'd, Shashkov, Volkov,  
Zhilko, Mitropol'skiy, Fedoseyev). 2. Listoprokatny tsekh  
Magnitogorskogo metallurgicheskogo kombinata (for Goncharov,  
Shemetov, Demin, Chuprina, Goncharenko, Simanyuk).

Erkrankung. *Die* See 15 Vol. 10/8 Chest Diseases Aug 57

2087. SIMARSKY J. Pathol. Inst., Med. Univ. Debrecen. *Besondere tuberkulotische Form von granulomatöser Periglomerulitis. A peculiar tuberculo-toxic form of periglomerulitis granulomatosa* ZBL. ALLG. PATH. PATH. ANAT. 1956, 95/5-6 (177-180) Illus. 3

A case of a male patient aged 56 is reported. In the history there were a tonsillitis, hydrarthrosis, pneumonia, and compensated mitral insufficiency. Three weeks after clinical treatment readmission to the hospital was necessary as the patient developed high temperature again. Penicillin was administered to combat pneumonia. ESR 100 mm./hr. There were anaemia, no leucocytosis, microscopic haematuria and azotaemia. Death was due to uraemic coma. At autopsy it was found that the liver and spleen contained granulomata, which were hardly suggestive of tuberculous origin, but nevertheless contained tb bacilli on microscopic examination. In the kidneys, proliferative inflammatory lesions were found, also localized in the vicinity of blood vessels. Numerous glomeruli were hyalinized. The granulomata consisted of radially arranged cells of epitheloid character, and also contained some macrophages. The findings in the kidneys were interpreted as tuberculotoxic, on the basis of a hyperergic inflammatory reaction. The primary focus was found in a caseating hilar lymph node and in para-tracheal lymph nodes.  
Rabl - Neustadt-Holst (V, 15)

KERESZTURY, Sandor; SIMARSZKY, Janos

Aneurysms of the ductus Botalli. Kiserletes Orvostudomány 11 no.1:  
107-112 Feb 59.

1. Debreceni Orvostudományi Egyetem Korbonctani Intezete.  
(DUCTUS ARTERIOSUS, aneurysm  
pathol. & histopathol., case reports (Hun))

EXCERPTA MEDICA Sec 18 Vol 4/1 Cardiovas. 11s. Jan. 60

280. **Aneurysms of the ductus arteriosus** Aneurysmen des Ductus Botalli. KUMSZTURY S. and SIMARSZKY J. Pathol. Inst., Med. Univ., Debrecen *Zbl. allg. Path. path. Anat.* 1959, 99:1-2 (68-73) Illus. 4

Two genuine aneurysms of Botallo's duct are reported: (1) A 1.5-month-old boy. Open ductus with a diameter of both the aortic and pulmonary orifice of 1 mm.; the 2 ends were 2 mm. long and had the same diameter; the middle part had the shape of a ball, measured 8 x 8 mm. and had a thickening of the wall which amounted to 0.5 mm.; it contained brownish, partly liquefied blood clot; histological findings: ruptured and dissociated internal elastic membrane, thinning of the media. (2) A 1.5-month-old boy. Both orifices of the duct were closed; the middle part was distended and measured 11 x 6 mm.; a laminated thrombus was found on its wall; histological findings: in some places the vascular wall was markedly thinned, the number of smooth muscle fibres was reduced, the internal elastic membrane was very thin, incompletely developed, and its continuity was interrupted. Apart from the aneurysms developmental disturbances in the biliary ducts with biliary cirrhosis were found. (Güthert - Erfurt (V, 7, 18)



MESZAROS, Gyorgy, dr.: SIMARSZKY, Janos, dr.

Primary leiomyosarcoma of the lung. Tuberkulozis 13 no.5:144-148 Ap '60.

1. A Debreceni Orvostudományi Egyetem Tbc klinikája (Mb. igazgató: Pingor, Ferenc, dr.) bronchológiai osztályának és Kóronctani Intézetének (Igazgató: Endes Pongrac, dr.) közleménye.  
(LUNG NEOPLASMS case reports)  
(LEIOMYOSARCOMA case reports)

SIMARSZKY, Janos; SLOWIK, Felicia; STIPUIA, Magdolna

Wegener's granulomatosis. Orv. hetil. 101 no.14:489-492 3 Ap '60.

1. Debreceni Orvostudományi Egyetem, Kóronstani Intézet.  
(GRANULOMA)  
(PERIARTERITIS NODOSA)

JAVOR, Tibor, dr.; KRISZTINICZ, Ivan, dr.; SMARSZKY, Janos, dr.

A case of melanosis coli. Orv.hetil. 101 no.42:1495-1496 16 0 '60.

1. Debreceni Orvostudományi Egyetem, II. sz. Belklinika és  
Korbonctani Intézet.

(MELANOSIS case reports)

SIMARSZKY, Janos, dr.

Secrococcygeal piloinidal sinus. Magy.sebeszet 14 no.1:39-42  
F '61.

1. A Debreceni Orvostudományi Egyetem Korbonctani Intezetének,  
közleménye. Igazgató: Endes Pongrac dr. egyet. tanár.  
(PILONIDAL CYST surg)

MESZAROS, Gyorgy, dr.; SIMARSZKY, Janos, dr.

Extramedullary endobronchial plasmocytoma. Tuberkulozis 14 no.2:55-57  
F '61.

1. A Debreceni Orvostudományi Egyetem Tbc Klinikájának (igazgató:  
Pongor Ferenc dr. egyetemi docens) és Korbonctani Intézetének (igazgató:  
Endes Pongrac dr. egyetemi tanár) közleménye.

(BRONCHI neopl)  
(MYELOMA PLASMA CELL case reports)

SIMARSZKY, Janos, dr.; LAMPE, Istvan, dr.

The incidence of co-existing sarcoma and carcinoma of the larynx.  
Fulorrgegyogyaszat 8 no.1:8-11 Mr '62.

1. A Debreceni Orvostudományi Egyetem Korbonctani Intezetének (Igazgato: Endes Pongrac dr., egyet. tanar) es Ful-, Orr-, Gegeklidikajanak (Igazgato: Verzar Gyula dr., egyet. tanar) kozlemenye.

(LARYNX neopl) (CARCINOMA compl) (SARCOMA compl)

25459  
P/045/61/020/007/001/002  
B111/B203

24.7700  
AUTHOR:

Shimashek, Yezhi

TITLE:

Critical magnetic fields of thin lead films

PERIODICAL:

Acta Physica Polonica, v. 20, no. 7, 1961, 553-561

TEXT: The experiments were made at temperatures near absolute zero. The cryostat shown in Fig.1 was used for temperatures above 4.2°K. For feeding the heating element, an automatic photoelectric amplifier was used; with its aid, it was possible to keep the temperature constant with an accuracy of 0.0005°K over any period of time. The resistance of the carbon thermometer changed in the range of 6.2 - 7.2 °K by 9900 ohms, and was measured with a high-ohmic potentiometer. The specimens were produced by vacuum condensation of lead onto plane, optically polished glass bases. Four platinum filaments were used for measuring the film resistance. The transitions from the supraconducting to the normal state were determined by measuring the resistance change as dependent on temperature or the outer magnetic field. The magnetic field was generated by a Helmholtz coil (H ≈ 250 oersted) or an electromagnet, and was always parallel to the

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25459

P/045/61/020/007/001/002

B111/B203

Critical magnetic fields ...

specimen plane. The tests were made on 16 specimens with a thickness of  $3.15 \cdot 10^{-6} - 1.16 \cdot 10^{-4}$  cm. Here,  $\Delta T = T_c - T$  about 1.2 °K,  $T_c$  critical temperature without a magnetic field. For film thicknesses smaller than  $1.62 \cdot 10^{-5}$  cm, the critical magnetic field  $H_c$  is proportional to  $(\Delta T)^{1/2}$ .

For film thicknesses above  $1.62 \cdot 10^{-5}$  cm, the curves  $H_c = f(\Delta T)$  show a break.

For thicknesses below  $1.62 \cdot 10^{-5}$  cm, the phase transitions occurring in a magnetic field from the supraconducting to the normal state are reversible; with larger thicknesses, they are reversible near the critical temperature only. From a certain  $\Delta T$  upwards, a hysteresis effect can be observed (Fig.5). The behavior occurring with greater film thicknesses may be explained with the formation of an intermediate state. The author thanks A. I. Shal'nikov for assistance. In the paper are mentioned: Shal'nikov, A. I.: Nature, 142, 74, (1938) Ref.1; ZhETF, 10, 630, (1940) Ref.2; Ginzburg, V. L.: ZhETF, 16, 87, (1946) Ref.8; Ginzburg, V. L., Landau, L. D.: ZhETF, 20, 1064, (1950) Ref. 10; Zavaritskiy, N. V.: DAN. 78, 665, (1951)

Card 2/9



25459

Critical magnetic fields ...

P/045/61/020/007/001/002  
B111/B203

Ref. 11; DAN, 85, 749, (1952) Ref. 12; PTE, no. 2, (1956) Ref. 13. . .  
There are 6 figures and 13 references: 6 Soviet-bloc and 7 non-Soviet-bloc.

ASSOCIATION: Kriogennaya laboratoriya PAN, Vrotslav (Cryogenic Laboratory  
PNS, Breslau)

SUBMITTED: February 16, 1961

Card 3/9

57/1147/1160 J.

25460

P/045/61/020/007/002/002  
B111/B203

24.2200 (1156, 1147, 1160)

AUTHOR: Shimashek, Yezhi

TITLE: Temperature dependence of the depth of penetration of a magnetic field into superconducting lead

PERIODICAL: Acta Physica Polonica, v. 20, no. 7, 1961, 563-565

TEXT: For the depth of penetration  $\delta$ , G. J. Gorter and H.B.G. Casimir (Ref.5: Phys. Z., 35, 963, 1934) derived the expression  $\delta = \frac{\delta_0}{\sqrt{1-(T/T_K)^4}}$  (1),

where  $\delta_0$  is the depth of penetration at  $T = 0^\circ K$ , and  $T_K$  is the critical temperature. For representing  $\delta(T)$ , it is convenient to use the expression following from the theory by V. L. Ginzburg and L. D. Landau (Ref.8: ZhETF, 20, 1064, 1950),  $H_K/H_{KM} = 2\sqrt{6} \delta/d$  (2), where  $H_K$  is the critical magnetic field of a thin film,  $H_{KM}$  is the critical magnetic field of a massive metal, and  $d$  is the thickness of the film. The dependence (2) is, however, only

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+

Temperature dependence of ...

25460  
P/045/61/020/007/002/002  
B111/B203

valid for such films for which the phase transitions from the superconducting to the normal state, and vice versa, are of the second order. By extrapolation of the measured T values for 0°K, the author obtains, with (1), for  $\delta_0 = (4.5 \pm 0.2) \cdot 10^{-6}$  cm. There are 1 figure and 8 references: 2 Soviet-bloc and 6 non-Soviet-bloc. The most important reference to English-language publications reads as follows: London, F., London, H., Proc. Roy. Soc., 149A, 71, 1935).

ASSOCIATION: Kriogennaya laboratoriya PAN, Wroslaw (Cryogenic Laboratory PAS, Breslau)

SUBMITTED: February 16, 1961

Card 2/3

SIMASHEV, Kh.M.,

Depending on nonsalaried workers. Zashch. rast. ot vred.  
1 bel. 5 no.1:35-36 Ja '60. (MIRA 14:6)

1. Mezhrayonnyy karantinnyy ispektor, Katta-Kurgan,  
Samarkandskoy oblasti.  
(Samarkand Province — Plant quarantine)

SIMASHOVA, N. P.

SIMASHOVA, N. P.

"Investigation of the Coagulation Process in Eutectic Alloys." Cand Tech Sci, Leningrad Polytechnical Institute N. I. Kalinin, Min Higher Education USSR, Leningrad, 1955. (KL, No 8, Feb 55)

SO: Sum. No. 631, 26 Aug 55-Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (14)

18(0)

PHASE I BOOK EXPLOITATION

SOV/2887

Leningrad. Politeknicheskii institut imeni M. I. Kalinina

Metallovedeniye (Physical Metallurgy) Moscow, Mashgiz, 1959. 107 p.  
(Series: Its: Trudy, vyp. 202) 2,300 copies printed.

Sponsoring Agency: Ministerstvo vysshego obrazovaniya SSSR.

Resp. Ed.: V. S. Smirnov, Doctor of Technical Sciences, Professor;  
Ed.: G. A. Kashchenko, Professor; Tech. Ed.: L. V. Shchetinina;  
Managing Ed. for Literature on the Design and Operation of Ma-  
chinery (Leningrad Division, Mashgiz): F. I. Fetisov, Engineer.

PURPOSE: This collection of articles is intended for engineers,  
technicians, and research workers in the fields of physical  
metallurgy and the heat treatment of metals.

COVERAGE: The papers in this collection contain the results of  
experimental work dealing with the study of constitution diagrams  
of metal systems, the nature of solid solutions, aging of complex  
alloys, processes occurring during the heating and cooling of alloys,  
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Physical Metallurgy

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and the thermochemical treatment of steel. References follow each article.

TABLE OF CONTENTS:

Preface	3
Gvozdo, S. P. (Deceased). Effect of Manganese on the Rate of Oxidation of Nickel at High Temperatures	5

The following are the author's conclusions: The oxidation of nickel alloys containing manganese in amounts of 2.7 percent and 5.04 percent proceeds in accordance with a parabolic law during the course of a 30- to 60-minute oxidation period. Numerical data obtained for nickel containing 2.7 percent Mn showed the following increases in the oxidation rate: at 650°, 130 percent; at 750°, 140 percent; at 850°, about 200 percent; and at 950°, 300 percent. For nickel containing 5.04 percent Mn the figures were as follows: at 650°, 250 percent; at 750° and 850°, about 300 percent; and at 950°, 500 percent.

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18 (7)

AUTHORS:

Zaytseva, L. P., Simasheva, N. P.

SOV/32-25-6-21/53

TITLE:

Separated Film Pickling of Binary and Ternary Phosphide Eutectics in Cast Iron (Razdel'noye plenochnoye travleniye dvoynoy i troynoy fosfidnykh evtektik v chugunakh)

PERIODICAL:

Zavodskaya Laboratoriya, 1959, Vol 25, Nr 6, pp 705-707 (USSR)

ABSTRACT:

To work out a method of differentiating visualization of binary and ternary phosphide eutectics, chemical and electrolytic picklings were carried out on the systems Fe - P, Fe - C and Fe - C - P. Experimental results obtained were applied in investigations of the structure of white iron and gray iron (with different contents of carbon and phosphorus). The results of various pickling operations as well as the composition of the pickling agents and the pickling conditions are specified (Table). An electrical pickling in a neutral solution of potassium ferricyanide at 6 v for 30-50 sec and a subsequent electrical pickling in an alkaline potassium ferricyanide solution at 3 v for 10-15 min (or chemical pickling for 15-25 min) are regarded as the most suitable method of visualizing the binary and ternary eutectics in cast iron. The first pickling renders cementite

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Separated Film Pickling of Binary and Ternary  
Phosphide Eutectics in Cast Iron

SOV/32-25-6-21/53

visible (the free one with respect to structure, as well as the one in ledeburite, and the one penetrating the ternary phosphide eutectic), while with the second pickling the phosphide of the binary and ternary eutectics becomes visible additionally. A few microstructure pictures of these picklings on cast iron are shown (Fig 2). There are 2 figures and 1 table.

ASSOCIATION: Leningradskiy politekhnicheskiy institut im. M. I. Kalinina  
(Leningrad Polytechnic Institute imeni M. I. Kalinin)

Card 2/2

KASHCHENKO, G.A.; SIMASHEVA, N.P.

Investigating the coagulation process in alloys with a eutectic.  
Trudy LPI no.202:11-24 '59. (MIRA 12: '2)  
(Alloys--Metallography) (Phase rule and equilibrium)

S/18/61/000/001/014/015  
A. 1. A. 1. 3

AUTHORS: Smirnov, V. S. ; Simasheva, N. P. ; Pavlov, N. N., and Sokolova, L. T.

TITLE: Investigation of the recrystallization process of the 3V661 (EI661) alloy

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Chernaya metallurgiya, no. 1, 1961, 176 - 180

TEXT: The investigation purpose was to find the recrystallization threshold of 3V661 (EI661) steel. [Abstractor's note: The chemical composition is not given. 1) Imprints by a 10 mm diameter ball under 3,000 kg load; heating to different temperature, soaking for 40 min, then cooling in open air; 2) Imprints with the same ball under 6,000 kg pressure; heating to different temperatures, soaking for 40 min, cooling; 3) Rolling at different temperatures with 80% reduction. The recrystallization diagram (Fig. 5) was plotted using forged half-cylinders 30 mm in diameter and 25 mm high, with a coordinate network traced on the parting surface of one

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S/46/6:000/001/014/015  
A:6/A:33

Investigation of the recrystallization process

of the half-cylinders. The pairs of specimens (i.e. the split cylinders) were placed into ring shells from 1X18H9T (1Kh18N9T) steel with 7.5 mm wall and heated in electric two-chamber furnaces in two stages: preliminary heating to 800°C in 30 min, then to the finally required forging temperature in 15 min. The heated specimens were upset in a crank press at 1.5 - 2.0 m/sec, and cooled in air. The total deformation was 20, 40 and 60%. The deformation of one of the specimens is illustrated (Fig. 4). The etching fluid consisted of 100 g CuSO<sub>4</sub>; 500 cm<sup>3</sup> HCl; 25 cm<sup>3</sup> H<sub>2</sub>SO<sub>4</sub>; 400 cm<sup>3</sup> H<sub>2</sub>O. The specimens deformed at 1,050 - 1,200°C were difficult to etch and covered with a light brown film. It was stated that austenite in these specimens was highly workhardened. Relaxed for 25 - 60 hours they etched in 60 sec without any film. The quantity of flat grains was determined using Salytkov's method (Ref. 1: Introduction to stereometric metallography, Published by AN Arm. SSR, 1950), and the quantity of nodule points in 5 to 10 fields. Prior to deformation the mean austenite grain size was 652 μ<sup>2</sup>, and no great difference in grain size was observed. The grain size increased on account of collective crystallization at higher temperatures and higher deformations, particularly at the critical degree of deformation. The

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S/148/61/000/001/014/015

Investigation of the recrystallization process... A161/A133

exception was at 1,180°C when the size reduced instead of increasing, not only at the critical deformation but at high deformation degrees, too. At 1,150°C the grain size was 600  $\mu^2$ , and at 1,180° - 500  $\mu^2$ ; the maximum size was 5,650 and 2,250  $\mu^2$  respectively. At 1,250°C the grain size at the critical deformation was 5850  $\mu^2$ , and at high deformation degrees 1200  $\mu^2$ . At reductions of over 12% the grain size did not depend on the deformation degree at any temperature. No second maximum of grain size could be stated in diagrams despite upsetting to nearly 90% at high temperature. Conclusions: 1) The plotted recrystallization diagrams cover a wide range of deformations that occur in practice in specimen tests. 2) The EI661 steel grain grows with the raising temperature. The exception is at 1,180°C where the grain size decreases at critical and higher deformation degrees. 3) A reduced grain size at 1,180°C, is accompanied with an increased plasticity of the EI661 steel in pressure working. 4) The grain size does not depend on the degree of deformation at compression above 12%. 5) The temperature of the recrystallization threshold depends on the deformation degree: it is about 1,000°C, at low deformation degrees near the critical; at higher deformation degrees it is lower. 6) No second maximum forms on the recrystallization diagram. This is due to the peculiar deformation conditions at up-

Card 3/5

S/148/61/000/001/014/015 ✓

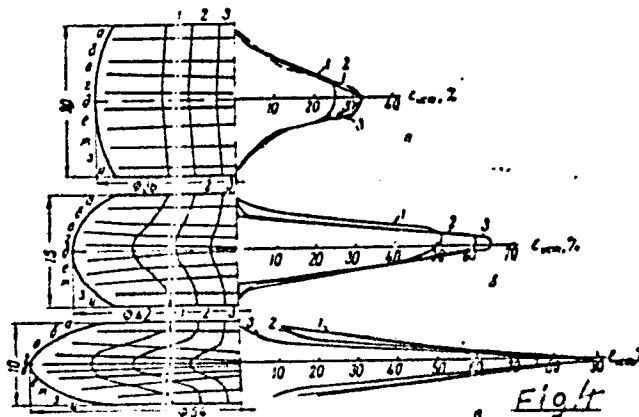
Investigation of the recrystallization process... A161/A133

setting in shells. There are 6 figures and 1 Soviet-bloc reference.

ASSOCIATION: Leningradskiy politekhnicheskij institut (Leningrad Polytechnical Institute)

SUBMITTED: August 15, 1960

Fig. 4.



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I. 13014-166 EWT(n)/EWP(w)/EWA(d)/T/ EWP(t)/EWP(k)/ EWP(z)/EWP(b) IPr(c)

ACC NR: AT6000930 MJW/JD

SOURCE CODE: UR/2563/65/000/251/0062/0069

AUTHOR: Zaytseva, L. P.; Zamotorin, M. I. (Candidate of technical sciences, Docent); Simasheva, N. P.; Fidlin, V. Ya.

ORG: Leningrad Polytechnical Institute (Leningradskiy politekhnicheskiy institut)

TITLE: Effect of electric discharge processing on aging in Armco iron and aluminum alloys

SOURCE: Leningrad. Politekhnicheskiy institut. Trudy. no. 251, 1965. Metallovedeniye (Metal science), 62-69

TOPIC TAGS: aluminum alloy, iron, dispersion hardening, *solid mechanical property, electric resistance, metal aging, electric discharge*

ABSTRACT: A study was made of electric discharge processing (EDP) in water, and its impact on aging behavior in Armco iron, aluminum alloys--Al-Cu<sup>2</sup> and Al-Mg-Si<sup>1</sup> and the alloys D1T and V95. <sup>10</sup>Tensile properties, hardness, impact energy, specific electrical resistance and microstructures were analyzed after various treatments. EDP was applied as follows: for Armco iron: (1) quench from 700°C (1 hr hold time) into water and natural aging for 1, 5 and 15 days; (2) same quench with supplementary EDP at room temperature immediately after, and after 1 and 5 days; (3) same quench with artificial aging at 50°C for 4 hrs; (4) same quench with EDP done at 70°C. For the aluminum alloys: similar EDP treatments and aging schedules, except that Al-3% Cu was quenched

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ACC NR: AT6000930

from 515°C and the Al-0.8% Mg-0.65% Si from 520°C; for alloy V95, same as above, except that different EDP temperatures were maintained. For DIT the treatment was the same as for the aluminum, except that quenching was at 500°C. The tensile properties for Armco iron after treatment are listed. The change in energy EDP did not affect the properties. EDP (especially at 70°C) raised both strength and hardness and caused a sharp decrease in specific electrical resistivity. These property changes were noted only after 1 day or more of natural aging. No differences could be observed between EDP and the usual quench and age treatment. The results for the aluminum alloys were similar in some respects. However, after aging for 15 days a significant lowering of hardness and an increase in impact energy was noted following EDP. The authors concluded that EDP in normally quenched alloys, and quenching in a field of electrical discharges, speeds up the decomposition process in the primary period of aging (to 1 day) but that after 5 days of aging the properties are almost identical. In some alloys, after 15 days of aging, a significant lowering in properties can be observed (strength, hardness). In dispersion hardening systems, the only effect observed was in the primary stages of aging. Orig. art. has: 5 figures, 2 tables.

SUB CODE: 11/3 / . SUBM DATE: 00/ ORIG REF: 001/ OTH REF: 000

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Card 2/2



ZAYTSEVA, L.P.; ZAMOTORIN, M.I.; SIMASHEVA, N.P.; FIDLIN, V. Ya.

Investigating the effect of electric discharge machining on  
the properties and structure of metals. Trudy LPI no. 251:  
57-61 '65 (MIRA 19:1)

Effect of electric discharge machining on the aging processes  
of armco iron and aluminum alloys. Ibid. 62-69.

SOV/137-58-9-19750

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 9, p 233 (USSR)

AUTHORS: Simashkevich, A.V., Slutu, S.I.

TITLE: Electrical Conductivity of CdSe Films (Elektroprovodnost' plenok CdSe)

PERIODICAL: Uch. zap. Kishinevsk. un-t, 1957, Vol 29, pp 153-156

ABSTRACT: The electrical conductivity  $\sigma$  of CdSe films (0.4-0.6  $\mu$ ) obtained by the Vekshinskiy method from spectroscopically pure Cd and Se (99.99%) was studied. The measurements were conducted in air in the 120-700°K temperature range. With a 120 to 300°K increase in temperature  $T$   $\sigma$  increases slowly from  $(1-5) \cdot 10^{-5}$  to  $(2-7) \cdot 10^{-5}$  mho/cm. With intrinsic conductivity  $\sigma$  increases attaining  $(1-2) \cdot 10^{-1}$  mho/cm at 700°K. The width of the band gap determined from the  $\sigma(T)$  relationship lies within the 1.65-1.75-ev range. The compound exhibits electronic conductivity. The  $\sigma(T)$  relationship in the low-temperature range differs from the metallic one. It is assumed that the activation energy of the impurity levels is low, but their concentration is comparatively high. Under these conditions the degeneration of electron gas in the

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SOV/137-58-9-19749

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 9, p 233 (USSR)

AUTHORS: Kot, M.V., Simashkevich, A.V.

TITLE: Cathode Conductivity of CdSe Single Crystals (Katodoprovodimost' monokristallov CdSe)

PERIODICAL: Uch. zap. Kishinevsk. un-t, 1957, Vol 29, pp 201-207

ABSTRACT: Results of measurements of cathode conductivity (C) in relation to the energy and the current of primary electrons and also to the intensity of irradiation are described. All measurements were carried out at a 44-v potential difference on the specimen for which the rectification coefficient equals 1. Upon an increase of the energy of the primary electrons or of the radiation power the rectification coefficient increases, which is associated with the asymmetric incidence of the beam of electrons on the specimen. The bombardment with electrons removes the adsorbed gases from the surface and decreases the concentration of the surface levels, which is indicated by a sharp increase of heat conductivity (HC) from  $9 \cdot 10^{-9}$  mho/cm at the beginning of the measurements to  $6 \cdot 10^{-6}$  mho/cm after a 90-minute bombardment. The restoration of the initial magnitude of HC in a

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SOV/137-58-9-19749

Cathode Conductivity of CdSe Single Crystals

vacuum proceeds very slowly, but upon the introduction of air into the test space the HC falls suddenly to  $5 \cdot 10^{-9}$  mho/cm. The induced conductivity is 3600 times greater than the HC under an accelerating potential of 4 ev and a primary current of  $1.6 \cdot 10^{-6}$  amp. Under equal intensity the value of C increases with decreasing magnitude of the primary current and with increasing energy of the primary electrons. With a constant intensity, the induced conductivity increases nonlinearly with an increase in the energy of primary electrons, and the depth of their penetration also increases. A temperature relationship of C is discovered. With an increase in temperature the induced conductivity decreases. During simultaneous irradiation with integral light and electrons the law of additivity is fulfilled only when the magnitude of the photoelectric current is less than the current of the cathode conductivity.

L.M.

1. Single crystals--Electrical properties
2. Electrons--Energy
3. Cadmium-selenium crystals--Analysis
4. Radiation--Intensity

Card 2/2

KOT, M.V.; SIMASHKOVICH, A.V.

Electrical conductivity of cadmium and zinc selenides. Izv.vys.  
ucheb.zav.; fiz. no.3:125-131 '59. (MIRA 12:10)

1. Kishinevskiy gosuniversitet.  
(Cadmium selenides--Electric properties)  
(Zinc selenides--Electric properties)

SIMASHKEVICH, A.V.; IOT, M.V.; TYRZIU, V.G.

Some photoelectric properties of thin layers of cadmium and zinc  
selenides. Izv. vys. ucheb. zav.; fiz. no.4:52-58 '59.  
(MIRA 13:3)

1. Kishinevskiy gosuniversitet.  
(Cadmium selenide--Electric properties)  
(Zinc selenide--Electric properties)  
(Photoconductivity)

SIMASHKEVICH, A.V.[Symashkevych, A.V.]; KOT, M.V.; PANASYUK, L.M.

Conductivity induced by electron bombardment in cadmium  
telluride and zinc selenide. Ukr. fiz. zhur. 5 no.4:504-508  
J1-Ag '60. (MIRA 13:11)

1. Kishinevskiy gosudarstvennyy universitet.  
(Cadmium telluride--Electric properties)  
(Zinc selenide--Electric properties) (Electron beams)

30413

S/058/61/000/009/033/050  
A001/A101

1160  
1142  
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24 7000

AUTHORS: Kot, M.V., Símashkevich, A.V.

TITLE: Electric conductivity of zinc telluride in thin layers

PERIODICAL: Referativnyy zhurnal. Fizika, no. 9, 1961, 216, abstract 9E299 ("Uch. zap. Kishinevsk. un-t", 1960, v. 55, 11 - 13)

TEXT: The authors studied electrical and optical properties of thin layers of zinc telluride obtained by simultaneous evaporation of Te and Zn or by direct evaporation of a massive specimen. The magnitude of specific conductivity of the layers turned out to be  $\sim 10^{-5} \text{ ohm}^{-1} \cdot \text{cm}^{-1}$  (at room temperature). The activation energy, determined from temperature dependence of electric conductivity in the high-temperature region, is equal to  $0.77 \pm 0.03 \text{ ev}$ . All specimens investigated, as measurements of the sign of thermo-emf have shown, have p-conductivity. Photoconductivity in the specimens investigated was not detected. There are 5 references.

K. G.

[Abstracter's note: Complete translation]

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X



30417

S/058/61/000/009/039/050  
AC01/A101

9,4177(1138)

26.2421

AUTHORS: Simashkevich, A.V., Lyalikova, T.Yu.

TITLE: Temperature dependence of zinc selenide photoconductivity

PERIODICAL: Referativnyy zhurnal. Fizika, no. 9, 1961, 225, abstract 9E380  
("Uch. zap. Kishinevsk. un-t", 1960, v. 55, 21 - 23)

TEXT: In order to clarify the processes taking place in ZnSe being subjected to illumination, the temperature dependence of photoconductivity of ZnSe layers obtained by atomized coating in vacuum and annealed in air was investigated. The temperature dependence of photoconductivity was obtained in both the atmosphere from room temperature to +300°C and in vacuum from the liquid O<sub>2</sub> temperature to +150°C. In both cases, with rising temperature photocurrent increases, attains a maximum and then drops (in the atmosphere the maximum is displaced toward higher temperatures). The magnitude of photocurrent and dark current at measurements in vacuum is higher than in the atmosphere; this is apparently explained by disappearance of traps, created by adsorbed air, in the ZnSe layer in vacuum. The growth of photo-conductivity in ZnSe occurs in the ✓

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S/058/61/000/009/039/050

A001/A101

Temperature dependence of zinc selenide ...

temperature range corresponding to transition from extrinsic to intrinsic conductivity; it is probably connected with an increase in the life time of carriers.

P. Nad' ✓

[Abstracter's note: Complete translation]

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22037

24, 7700(1035, 1043, 1143)  
26.2421

S/181/61/003/004/003/030  
B102/B214

AUTHORS: Simashkevich, A. V., Kot, M. V., and Ianasyuk, L. M.

TITLE: Effect of the contact material on the cathode conductivity of cadmium sulfide and cadmium selenide

PERIODICAL: Fizika tverdogo tela, v. 3, no. 4, 1961, 1035-1037

TEXT: While the effect of the contact material on the photoconductivity of CdS has been studied many times before, among others also by V. Ye. Lashkarev, D. N. Lazarev, and M. K. Sheynkman, its effect on the cathode conductivity had not yet been investigated. The authors have investigated now the effect of ohmic and nonohmic contacts on the distribution of the cathode sensitivity in single crystals of CdS and CdSe by a probe method described by them in Ref. 4 (Uch. zap. Kishinevsk. gos. univ. 29, 201, 1957). To study the role of the electrodes, "probe characteristics" were taken, i.e., the samples were irradiated by a narrow electron probe which could be moved from one electrode to the other. The single crystals studied came from I. B. Mizetskaya of IF AN USSR (Institute of Physics, AS UkrSSR). The electrodes were evaporated on the crystal in vacuo. The distance

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B102/B214

Effect of the contact ...

between them was about 5 mm, 10 times as large as the diameter of the probe. In all, three groups of samples were measured: The first group consisted of CdS and CdSe crystals with ohmic contacts (In), the second of such with nonohmic contacts (Au), and the third of mixed contacts (In - Au). The crystals showed no cathodoluminescence. Fig. 1 shows a typical probe characteristic for samples of the first group. The ordinate is the cathode conduction current  $I_k$ , defined as the difference between the current flowing through the sample on irradiation and the dark current. The abscissa is the potential between the plate moving the probe and one of the electrodes. The characteristics in Fig. 1 were taken for a single crystal of CdSe with an electron energy  $V_1 = 3$  kev, a current strength of the irradiating beam  $I_1 = 4 \cdot 10^{-8}$  a, and a potential of 25 v at the sample. Curve 2 was taken for the reversed polarity. A characteristic feature of these samples is that the cathode conductivity in the central region is practically independent of the point of incidence of the electron beam and of the direction of the field. Fig. 2 shows analogous characteristics for single crystals of CdSe with Au contacts. ( $V_1 = 3$  kev,

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B102/B214

-Effect of the contact ...

$I_1 = 1 \cdot 10^{-7}$  a, and 25 v at the sample). Here, the relationships are completely reversed: The cathode conductivity drops in the region near the cathodes and reaches a maximum in the central region (near the electrode which, at the given moment, is the cathode). Fig. 3 shows the characteristics of CdSe with mixed contacts (2.4 kev,  $6 \cdot 10^{-7}$  a, 25 v). Independently of the polarity, the lowest conductivity here is on the side of the Au contact near which also a maximum of the characteristic appears. A minimum appears near the In contact, and in the immediate neighborhood there occurs a steep rise independently of the polarity. The results are indicative of a special role of the holes on irradiation of parts away from the cathode. The authors thank D. N. Nasledov for advice and interest. There are 3 figures and 4 references: 2 Soviet-bloc and 2 non-Soviet-bloc.

ASSOCIATION: Kishinevskiy gosudarstvennyy universitet (Kishinev State University) X

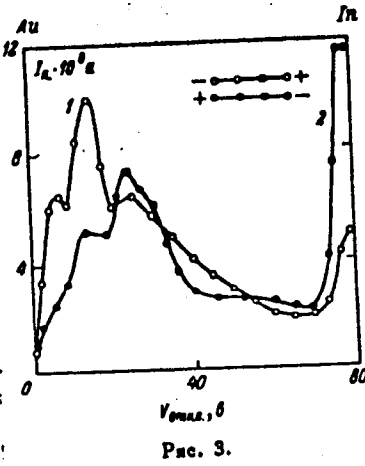
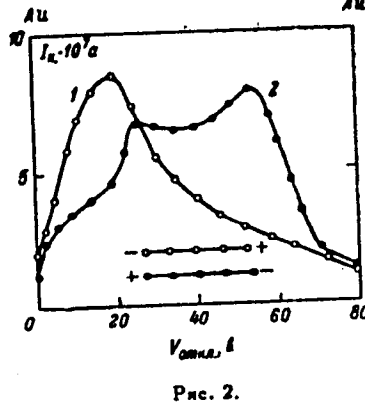
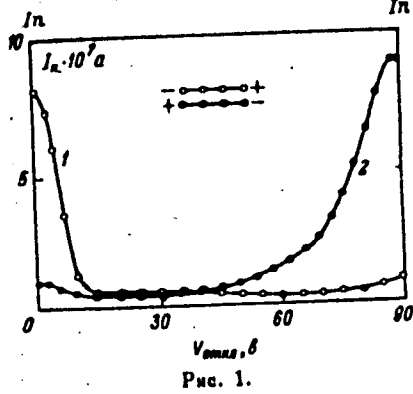
SUBMITTED: May 10, 1960 (initially), November 30, 1960 (after revision)

Card 3/4

22037

S/181/61/003/004/003/030  
B102/B214

Effect of the contact ...



Card 4/4

9.2300 (1001, 1385)  
26.7532

S/139/61/000/005/014/014  
E073/E335

**AUTHORS:** Kot, M.V. and Simashkevich, A.V.  
**TITLE:** Cathodic conductance of thin layers of cadmium selenide  
**PERIODICAL:** Izvestiya vysshikh uchebnykh zavedeniy, Fizika, no. 5, 1961, pp. 169 - 170

**TEXT:** The authors give results on the transverse cathodic conductance of layers of cadmium selenide under the effect of bombardment with electrons of energies up to 3.5 keV. The specimens were produced by evaporating polycrystalline cadmium selenide on a glass base, heated to 250 °C. Terminal contacts were produced by vacuum deposition of indium electrodes spaced 2 mm apart. The circuit and technique used were described in earlier work (Ref. 6 - Uch.zap.KGU, 29, 201, 1957). The resistance of the specimens was of the order of  $10^9 \Omega$ . After being placed into the metering tube and evacuated to  $10^{-5}$  mm Hg, the resistance of the layers decreased by a factor of 2. Electron bombardment produced two phenomena: 1) the resistance of the thin layers decreased suddenly by two to three orders of

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X

30476

S/139/61/000/005/014/014  
E073/E335

Cathodic conductance ....

magnitude and maintained its value after the radiation beam was switched off, provided that the vacuum in the metering tube was maintained. The resistance increased sharply to its initial value as soon as air was admitted; this phenomenon is explained by the purification of the surfaces of the specimens from the adsorbed gas, which acts as an electron trap;

2) there was a reversible change in the conductance of layers previously treated with an electron beam. In the case of an electron energy of 3 keV and a voltage of 30 V being applied to the specimen, the cathode-conductance current  $I_K$ , which equals the difference between the current flowing through the specimen on irradiation with electrons and the darkness current, shows a nonlinear increase with increasing intensity of the current in the primary beam  $I_1$  and, under the given conditions, it was higher than  $I_1$  by about two orders of magnitude, Fig.1.

[Abstracter's note: the term " $I_1 \times 10^8$ " A in Fig. 1 should read " $I_1 \times 10^{-8}$ " A]. With increasing energy

Card 2/4

X



3476

S/139/61/000/005/014/014  
E073/E335

Cathodic conductance ....

of the primary electrons, the cathodic conductance current also increases. As has been shown in earlier work of the authors, in the case of cadmium-selenide single crystals a linear dependence is observed between the cathodic conductance current and the primary current. Thin layers of cadmium selenide also show a greater inertia than single crystals. This difference between the behaviour of thin layers and of single crystals is attributed to the differing conditions of recombination.

[Abstracter's note: this is an abridged translation.]  
There are 1 figure and 7 references: 6 Soviet-bloc and 1 non-Soviet-bloc.

ASSOCIATION: Kishinevskiy gosuniversitet  
(Kishinev State University)

SUBMITTED: July 15, 1960

Card 3/4

X

11695  
S/837/61/049/000/007/011  
E102/B104

AUTHORS: Kot, M. V., and Simashkevich, A. V.

TITLE: The temperature dependence of the cathodic conductivity of cadmium sulfide and selenide

SOURCE: Kishinev. Universitet. Uchenyye zapiski. v. 49, 1961, 101-104

TEXT: A special tube was devised and constructed for measuring the temperature dependence of the cathodic, photo- and dark conductivity of CdS and CdSe. The measuring circuit was the same as already used (Uch. zap. KGU, 29, 201, 1957). The pressure inside the tube was not above  $10^{-5}$  mm Hg. The measurements were made with crystals obtained from the gaseous phase which were glued onto glass backings, and with CdSe films condensed in vacuo onto hot ( $200^{\circ}\text{C}$ ) glass bases. The temperature dependence of the cathodic conductivity was measured using an electron beam of 3 keV and  $2 \cdot 10^{-8}$  a. The specimens investigated were held in vacuo for 24 hrs and purified by electron bombardment so as to ensure well

Card 1/2

The temperature dependence of the ...

S/837/61/049/000/007/011  
E102/B104

reproducible results. When gas is adsorbed on the specimens the cathodic conductivity is much lower, but only so below 0°C. The photoconductivity, measured with specimens irradiated by white light, showed a similar temperature dependence and is affected by adsorbed air in a similar and reversible way. Also the temperature dependence of the dark conductivity is strongly influenced by surface degasification. The conductivity maximum observed near room temperature for mono- and polycrystalline as well as film samples vanishes when the samples are degasified. There are 4 figures.

Card 2/2

L 15168-63 EWT(1)/EWG(k)/EWP(q)/EWT(m)/BDS/EEC(b)-2/ES(w)-2 AFPTC/  
ASD/ESD-3/SSD Pz-4/Pab-4 RDW/JD/AT/RH/IJP(C)  
ACCESSION NR: AR3003344 S/0058/63/000/005/EO93/EO93

SOURCE: RZh. Fizika, Abs. 5E587 79

AUTHOR: Kot, M. V.; Simashkevich, A. V.

TITLE: Effect of surface recombination on the cathode conductivity of CdS and CdSe crystals

CITED SOURCE: Tr. po fiz. poluprovodnikov. Kishinevsk. un-t, vyp. 1, 1962, 19-27

TOPIC TAGS: cathode conductivity, surface recombination, diffusion length, carrier lifetime, cadmium sulfide, cadmium selenide

TRANSLATION: The authors have experimentally investigated previously (RZhFiz, 1958, No. 8, 18333) the dependence of the cathode conductivity of CdS and CdSe crystals on the energy of the primary electrons. By comparing the results of such investigations with the theory developed by Gergeli (RZhFiz, 1961, 10E443), several parameters were determined, characterizing the surface recombination of carriers in CdS and CdSe. An estimate is made of the diffusion length  $L$ ;  $L = 0.12\mu$  and  $0.055\mu$  for CdS and CdSe, respectively. At a pressure of  $10^{-5}$  mm Hg, the rate of surface recombination amounts to  $8 \times 10^5$  and  $8.6 \times 10^5$ — $8.6 \times 10^6$  cm/sec for CdS and CdSe,

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L 15168-63  
ACCESSION NR: AR3003344

respectively. Purification of the surface of the CdS crystals by electron bombardment reduces the rate of surface recombination by approximately 5 times. It is shown that the energy of production of an additional pair amounts to 9.6 and 8.1 eV in CdS and CdSe, respectively. The lifetimes of the holes in the crystals of these substances lies in the interval  $10^{-10}$ — $10^{-11}$  sec and is approximately eight orders of magnitude smaller than the lifetimes of the electrons. A. Zhdan

DATE ACQ: 17Jun63

SUB CODE: PH

ENCL: 00

Card 2/2

L 10055-63

EWI(1)/BDS/EEC(b)-2--AFFTC/ASD/ESD-3--LJP(C)  
ACCESSION NR: AR3000384 8/0058/63/000/004/E074/E074

59

SOURCE: RZh. Fizika, Abs. 4E488

AUTHOR: Kot, M. V.; Simashkevich A. V.; Tyrziu, V. G.

TITLE: Electrical, optical, and photoelectric properties of thin layers of the ZnSe-CdSe system <sup>21</sup>

CITED SOURCE: Tr. po fiz. poluprovodnikov. Kishinevsk. un-t, vyp. 1, 1962, 110-120

TOPIC TAGS: Thin layers, ZnSe-CdSe system, electrical and optical properties, photoelectric properties

TRANSLATION: An investigation was made of the electric conductivity, photoconductivity, and optical properties of layers of the ZnSe-CdSe system, obtained by simultaneous evaporation of ZnSe and CdSe on glass and quartz substrates heated to 260° C, as functions of the percentage composition of the components. The specific conductivity decreases monotonically, and the

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L 10055-63

ACCESSION NR: AR3000384

0

activation energy, calculated from the temperature dependence of the conductivity and from the long-wave absorption boundary and the photoconductivity increases with increasing ZnSe content in the system. A study of the optical properties has shown that for each composition there is its own transmission boundary, which shifts toward the longer wavelengths with increasing CdSe in the system. Simultaneously, an increase takes place in the refractive index. All the layers obtained had noticeable photoconductivity, which increased after the layers were annealed in air. On the basis of the obtained results, the authors cannot make an unequivocal conclusion whether the layers obtained constitute a series of solid solutions or mechanical mixtures. P. Konorov.

DATE ACQ: 14May63 ENCL: 00 SUB CODE: PH

CS/ *ja*  
Card 2/2

L 10053-63

EWT(1)/EDS/EEC(b)-2--AFFTC/ASD/ESD-3--IJP(C)

ACCESSION NR: AR3000379

S/0058/63/000/004/E067/E067

60

SOURCE: RZh. Fizika, Abs. 4E451

AUTHOR: Kot, M. V.; Simashkevich, A. V.; Tyrziu, V. G.; Tsurkan, A. Ye.

TITLE: Electric, optical, and photoelectric properties of thin layers of the ZnTe-CdTe system 21

CITED SOURCE: Tr. po fiz. poluprovodnikov. Kishinevsk. un-t, vyp. 1, 1962, 121-130

TOPIC TAGS: ZnTe-CdTe system, thin layers, electric properties, optical properties, photoelectric properties

TRANSLATION: In order to obtain a system with prescribed properties, a study was made of the ZnTe-CdTe system. The specimens were obtained by separate or by combined evaporation of binary components on heated substrates with subsequent heating until a homogeneous solid solution was obtained, as monitored by the appearance of only one long-wave absorption edge. The volt-ampere characteristics

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L 10053-63

ACCESSION NR: AR3000379

0

are linear; the specific electric conductivity  $\Sigma$  in vacuum varies monotonically with the concentration of ZnTe from a value  $6.18 \times 10^{-7}$  (for pure CdTe) to  $5.54 \times 10^{-5} \text{ ohm}^{-1} \text{ cm}^{-1}$  (for pure ZnTe); the logarithm of the electric conductivity depends lineally on the inverse temperature; in air  $\Sigma$  drops by one or two orders of magnitude, and is restored in vacuum; the conductivity is of the p-type. The optical properties were investigated in air at room temperature. The reflection coefficient, the position of the absorption edge, and the photosensitivity spectrum vary depending on the relative concentration within certain limits for pure components, the same as the electric conductivity. The width of the forbidden zone and the thermal activation energy vary lineally with the relative concentration, and no intrinsic conductivity appears. L. Gudymendo

DATE ACQ: 14May63 ENCL: 00 SUB CODE: PH

cs/ ja  
Card 2/2

04.1102

S/181/62/004/006/024/051  
B104/B112

AUTHORS: Kot, M. V., Tyrziu, V. G., Simashkevich, A. V.,  
Maronchuk, Yu. Ye., and Mshenskiy, V. A.

TITLE: The dependence of the activation energy on the molar  
composition in thin layers of some  $A^{II}B^{VI} - A^{II}B^{VI}$  systems

PERIODICAL: Fizika tverdogo tela, v. 4, no. 6, 1962, 1535 - 1541

TEXT: Thin layers of the systems ZnSe-CdSe, ZnTe-CdTe, ZnSe-HgSe, CdSe-HgSe, and CdTe-HgTe were prepared by Vekshinskiy's method. The layers were sputtered onto cold and heated glass and mica backings and subsequently annealed in vacuo or air. The layers sputtered onto cold backings revealed an inhomogeneous structure. The activation energy was determined from the temperature dependence of electrical conductivity, and from the spectral dependence of photo-conductivity at room temperature. Under certain temperature conditions, layers could be obtained having continuously variable composition. The optical activation energy of the systems ZnTe-CdTe, ZnSe-HgSe, and CdTe-HgTe

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The dependence of....

S/181/62/004/006/024/051  
B104/B112

is a linear function of the molar composition; that of the systems ZnSe-CdSe and CdSe-HgSe is not a linear, but a monotonic function of the molar composition. In the former case, one is dealing with solutions with one type of lattice, and in the latter with solutions with two types of lattice. The decrease in the optical activation energy of the systems is as follows: for the system ZnSe-CdSe from 2.6 eV (100% ZnSe) to 1.7 eV (100% CdSe); for ZnTe-CdTe from 2.1 to 1.4 eV; for ZnSe-HgSe from 2.6 to 0.4 eV; and for CdTe-HgTe from 1.4 to less than 0.1 eV. There are 5 figures.

ASSOCIATION: Kishinevskiy gosudarstvennyy universitet (Kishinev State University)

SUBMITTED: January 27, 1962

Card 2/2

KOT, M.V.; SIMASHKEVICH, A.V.

Transverse cathode conductivity of crystals and thin films of  
A<sup>IV</sup> and B<sup>VI</sup> type compounds. Radiotekh. i elektron. 7 no.9:1672-  
1679 S '62. (MIRA 15:9)  
(Transistors) (Dielectrics) (Electric conductivity)

Negative magnetoresistivity in hexagonal, n-type silicon carbide.  
V. Mirzabayev, V. M. Tuchkevich, Yu. V. Shmartsev (10 minutes).

Structure and electrical properties of the system CdSe-HgSe.  
M. V. Kot, V. A. Mshenskiy.

Structure and electrical properties of the system HgTe-ZnTe.  
S. A. Danilyuk, M. V. Kot.

Structure and electrical properties of the system ZnSe-HgSe.  
M. V. Kot, A. V. Simashkevich.

Report presented at the 3rd National Conference on Semiconductor Compounds,  
Kishinev, 16-21 Sept 1963

ACCESSION NR: AP4041378

S/0048/64/028/006/1065/1068

AUTHOR: Kot, M.V.; Simashkovich, A.V.

TITLE: Structure and electric properties of the ZnSe-HgSe system [Report, Third Conference on Semiconductor Compounds held in Kishinev 16 to 21 Sep 1963]

SOURCE: AN SSSR. Izvestiya. Soriya fizicheskaya, v.23, no.6, 1964, 1065-1068

TOPIC TAGS: semiconductor property, electric conductivity, thin film, solid solution, conductivity, zinc selenide, mercury selenide

ABSTRACT: Polycrystalline specimens and thin films of ZnSe-HgSe solid solutions were prepared and their conductivities were measured. The bulk materials were prepared by heating the vacuum distilled elements in quartz tubes with vibration and subjecting them to a sequence of anneals, ending with a 50 to 100 hour anneal at 500 to 600°C. X-ray investigations showed the materials thus obtained to be solid solutions with face-centered cubic lattices. The lattice constant varied linearly with composition. The materials rich in HgSe were very coarse grained, and the grain size decreased with increasing ZnSe content. The thin films were prepared by a method described elsewhere (M.V.Kot, V.G.Ty\*rziu, A.V.Simashkevich, Yu.Ye.Maronchuk and

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ACCESSION NR: AP4041378

V.A.Mshenskiy, Fiz.tverdogo tela 4,1536,1962). The conductivity at room temperature varied monotonically with composition. The thin films containing less than 65% HgSe were considerably more conductive than the corresponding bulk materials; for materials containing more than 65% HgSe the opposite was true. The conductivities were measured at temperatures from 20 to about 300°C. The temperature dependence of the conductivity of the films was similar to that of the bulk materials. The conductivity of materials containing more than 60% HgSe decreased slightly with increasing temperature; that of materials containing less than 60% HgSe increased with temperature; the conductivity of the solution containing 60% HgSe passed through a minimum at 200°C. The activation energies obtained from the conductivity measurements varied monotonically with composition from 2.55 eV for ZnSe to 0.48 eV for the material containing 60% HgSe. These activation energies (except for ZnSe) are considerably lower than those obtained by the authors et al. (loc.cit.supra) by optical means. The observed conductivity was accordingly not intrinsic. Hall constants were measured at room temperature for some of the more conductive specimens. The conduction electron concentration varied between  $2 \times 10^{17}$  and  $3 \times 10^{18}$  cm<sup>-3</sup> and the mobilities were of the order of  $10^4$  cm<sup>2</sup>/V sec for the bulk materials and  $10^3$  cm<sup>2</sup>/V sec for the films. "In conclusion, the authors consider it their duty to express their gratitude to M.M.Markus of the Institute of Physics and Mathematics of the Academy of

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ACCESSION NR: AP4041378

Sciences of the Moldavian SSR, for assistance in conducting the x-ray investigations, and to S.N.Shestatskiy and M.S.Kats, graduates of Moscow State University, for their active participation in the syntheses and measurements." Orig.art.has: 4 figures.

ASSOCIATION: Kishinevskiy gosudarstvennyy universitet (Kishinov State University)

SUBMITTED: 00

ENCL: 00

SUB CODE: SS, IC

NR REF SOV: 002

OTHER: 001

Card 3/3



KOT, M.V.; SIMONKEVICH, A.V.

Structure and electric properties of the system ZnSe - HgSe.  
Izv. AN SSSR, Ser. fiz. 28 no.6, 1065-1068 Je '64.

(MIRA 17:7)

1. Kiehnovski gosudarstvenny universitet.

L 52781-65 EWT(1)/EWT(m)/EWG(m)/T/ENP(t)/ENP(b)/EWA(h) Pz-6/Peb  
IJP(c) RDW/JD/AT

ACCESSION NR: AP5010746

UR/0181/65/007/004/1242/1243

AUTHOR: Kot, M. V.; Panasnyk, L. M.; Simashkevich, A. V.; Tsurban, A. Ye.

31  
29  
0

TITLE: Intrinsic recombination radiation of zinc telluride

SOURCE: Fizika tverdogo tela, v. 7, no. 4, 1965, 1242-1243

TOPIC TAGS: zinc telluride, recombination radiation, intrinsic radiation, pn junction, voltage current characteristic, spectral distribution

ABSTRACT: This is the first known investigation of recombination radiation produced by injection through a zinc-telluride p-n junction. The junctions were produced in single-crystal zinc telluride plates with area up to 1 mm<sup>2</sup>. The test consisted of determining the voltage-current characteristic, the spectral distribution of the recombination radiation at various current densities, and the dependence of the radiation intensity on the current density. The dark voltage-current characteristics are strongly asymmetrical, with the forward current being approximately 10 mA at 2 V and the inverse current being 5 μA at 8 V. Passage of current through the sample in the transmission direction results in recombination radiation with an emission band lying in the 0.5--0.7 μ wavelength interval. With increasing

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L 52781-65

ACCESSION NR: AP5010746

2

current density, the intensity of the radiation increases and the width of the band decreased as a result of the shift of the long-wave boundary toward shorter wavelengths. The energy of the radiation quanta was determined from the positions of the maxima of the spectral curves to be 2.1--2.2 eV, corresponding to the width of the forbidden band of zinc telluride at room temperature. It is thus concluded that the radiation observed is intrinsic recombination radiation. The intensity of the radiation at room temperature increases somewhat faster than linear up to current densities of  $5 \text{ A/cm}^2$ . When the current density exceeds  $1 \text{ A/cm}^2$ , the radiation can be observed visually both in the direction parallel to the plane of the junction and perpendicular to it. The brightness amounted to 5 nit at 20C and 50 nit at 77K. "The authors thank Professor D. N. Kasledov for continuous interest in the work and for valuable advice." Orig. art. has: 2 figures.

ASSOCIATION: Kishinevskiy gosudarstvennyy universitet (Kishinev State University)

SUBMITTED: 24Apr64

EXCL: 00

SUB CODE: SS, OF

NR REF SOV: 000

OTHER: 000

B16  
Card 2/2

L 52790-65 EWT(1)/EWT(m)/EWG(m)/T/EWP(t)/EWP(b)/EVA(h) Pz-6/Peb  
IJP(c) RDW/JD/AT

UR/0181/65/007/004/1244/1245

ACCESSION NR: AP5010747

AUTHOR: Kot, M. V.; Panasyuk, L. M.; Simashkevich, A. V.; Tsurkan, A. Ye.; Sherban, D. A.

TITLE: On the intrinsic recombination radiation of ZnSe--ZnTe heterojunctions

32  
30  
8

SOURCE: Fizika tverdogo tela, v. 7, no. 4, 1965, 1244-1245

TOPIC TAGS: heterojunction, pn junction, recombination radiation, intrinsic radiation, voltage current characteristic, spectral distribution

ABSTRACT: The authors report the first successful attempt to produce n-p heterojunctions ZnSe--ZnTe in crystal-layer form, to obtain effective injection of minority carriers, and to observe intrinsic recombination radiation. The voltage-current characteristic of such junctions has the usual diode character. The forward current was several milliamperes at 2 V, and the inverse current up to 20  $\mu$ A at 5 V. The dependence of the short-circuit current on the illumination, the lux-ampere characteristics, and the spectral distribution of the photo emf were investigated. In all the samples the short-circuit current depends linearly on the illumination. The no-load voltage was 0.6--0.7 V. The samples were sensitive to

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