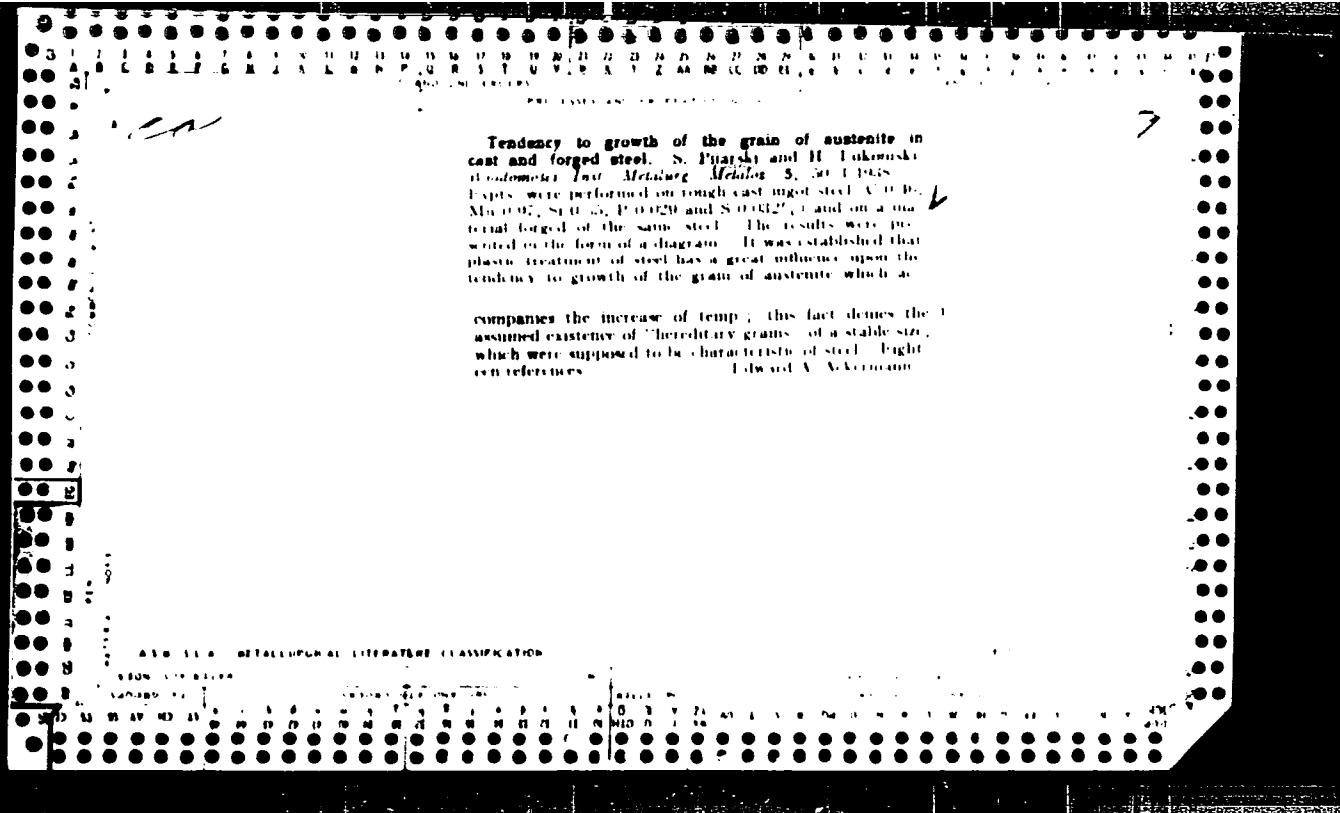
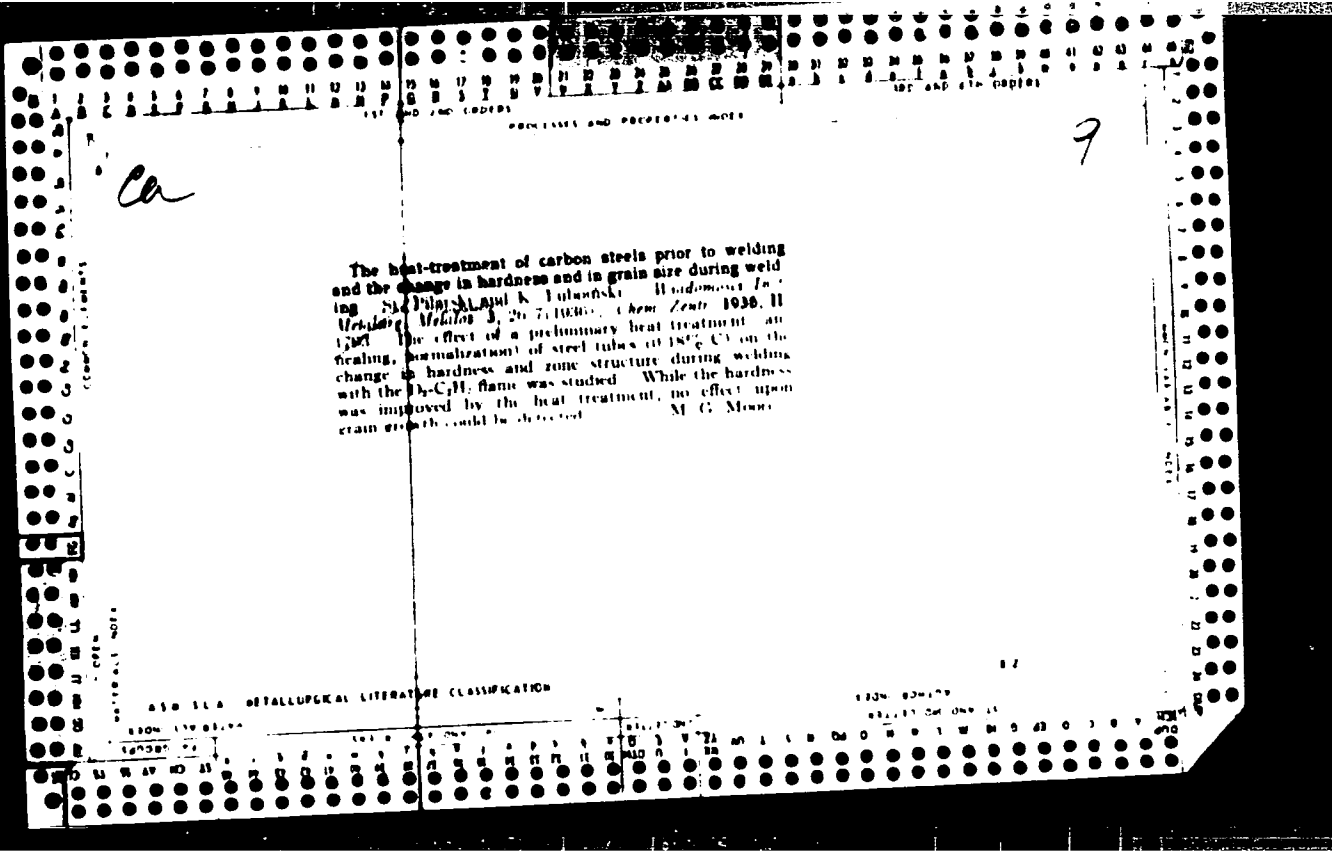


**Influence of nonmetallic inclusions on the mechanical properties of chrome molybdenum construction steel**  
 S. Pilarski and S. Jazwinski. *Wydawnictwo Instytutu Metalurgii* 4, 65-72 (1961). The influence of nonmetallic inclusions on mech. and fatigue properties of chrome molybdenum construction steel was investigated on test pieces cut parallel to the direction of rolling. Some of the strength characteristics have greater values in steel with a low amt. of inclusions, the value of some others is greater for highly impure steel. The results depend very much on the heat treatment to which the steel was submitted before its testing. Twenty-six illustrations. II *Ibid.* 139-44. The mech. and fatigue properties of pure and impure steel as obtained with test pieces cut perpendicularly to the direction of the grain structure are studied. It appears that independently of the heat treatment the tensile strength, yield point, elongation, reduction of area and impact value are lower for impure steel. The greatest differences were obtained, as in the case of parallel test pieces, for steel tempered at 620. An Amster rotating-beam fatigue test for thermally improved "perpendicular" test pieces gave a higher value for the pure steel. The fatigue limit of repeated impact bending test for thermally improved "parallel" test pieces is higher for the impure steel. Seven illustrations. I. A. A.

ASB 514 METALLOGICAL LITERATURE CLASSIFICATION





FORA, O.; PILBESKY, J.

Intradermal vaccination against smallpox with vaccine diluted  
with phytolol, in solution 1:1/2. week. pediat. J.C. 12.9:531  
S 1955.

Metastatic tumors, H., no. 3:103-127

Metastatic tumors of the lung. J. Natl. Cancer Inst. 1964; 33:103-127.

PILARZOWA, I.; ZAWIRSKA, B.

Placenta in pyelitis in pregnancy. Pat. polska 7 no.1:41-48  
Jan-Mar 56.

1. Z I Kliniki Położnictwa i Chorob Kobietych i z Zakładu  
Anatomii Patologicznej A. M. we Wrocławiu Wrocław, Chalubinskiego  
5.

(PLACENTA, in various diseases,  
pyelitis. (Pol))

(PYELITIS, in pregnancy,  
placenta in. (Pol))

(PREGNANCY, complications,  
pyelitis, placenta in. (Pol))

PILARZOWA, Irena

KORDICZ, Janina; PILARZOWA, Irena

Cases of precocious puberty in a 11-month-old girl. *Pediat. polska*  
29 no.5:501-509 May 54.

1. Z II Kliniki Pediatricznej Akademii Medycznej we Wroclawiu.  
Kierownik: prof. dr med. M. Wiersbowska.  
(PUBERTY, PRECOCIOUS,  
in 11-month-old girl)

RECEPTA MEDICA Sec 9 Vol. 9/11 Surgery Nov 55

PILASZANOVICH I

4826. PILASZANOVICH I. Pécsi Orvostud. Egyet. Gyermekklin.: 1. sz. Sebész. Klin. közleménye. Adatok a hosszantartó infraauriculáris parotissipoly gyógykezeléséhez. Contributions to the treatment of infra-auricular fistulae of long standing MAG. SEBÉSZET 1954, 7/4 (313-317) Illus. 2

Report of a case. The fistula in the parotid substance was curetted and tunneled through, partly by blunt, partly by sharp dissection. A drainage tube of 4 mm. calibre was introduced through the mouth and its end sutured to the substance of the gland at the site of exit of the fistula. Primary closure of the operative wound of the parotid gland was carried out in a few stages. Healing of the wound was uninterrupted and was complete in 6 weeks.

Author



PILASZANOVICH, I.

Penicillin therapy and surgery of osteomyelitis in children. Orv. hetil.  
94 no.19:521-524 10 May 1953. (CIML 25:1)

1. Doctor. 2. Children's Clinic (Director -- Prof. Dr. Odon Fronius-  
Kerpel), Pecs Medical University.

PIIASZANOVICH, Imre, Dr.; HAINOS, Laszlo, Dr.

Congenital partial duplications of the intestinal system; two cases of successful surgery in rectum duplex. Orv. hetil. 99 no.6:205-208 9 Feb 58.

1. A Pecsí Orvostudományi Egyetem Gyermekklinikajának (igazgató: Kerpel-Fronius Odon dr. egyet. tanár) közleménye.

(RECTUM, abnorm.

rectum duplex prolapsus, surg., case reports (Hun))

PILASZANOVICH, Imre, dr.; HAIMOS, Laszlo, dr.; SZOLLOSSY, Laszlo, dr.;  
PIRIK, Andras, dr.

**On anorectal atresia.** Orv. hetil. 105 no.8:347-351; 23 F'64.

1. Pecsí Orvostudományi Egyetem, Gyermekklinika (igazgató:  
Kerpel, Frónius, Odon, dr.) .

HAIMOS, Laszlo, dr.; PIASZANOVICH, Imre, Dr.

Congenital duodenal obstruction. Gyermekgyógyászat 9 no.7:204-207 July 58.

1. A Pécsi Orvostudományi Egyetem Gyermekgyógyászati Klinikájának (Igazgató: Kerpel Frónius Odon dr., egyet. tanár) közleménye.  
(INTESTINAL OBSTRUCTION, in inf. & child  
congen. duodenal (Hun))

PILASZANOVICH, Imre, Dr.; HALMOS, IASZLO, Dr.

Successful surgery in a case of cardiac tamponade. Orv. hetil. 99 no.12:  
414-415 28 Mar 58.

1. A Pecs i Orvostudományi Egyetem Gyermekklinika jának (igazgató: Kerpel-  
Fronius Odon dr. Egyet. tanár) Közleménye.

(HEART, wds. & inj.

cardiac tamponade due to stab wound in child,  
successful surg. (Hun))

PILASZANOVICH, Imre, dr.; HALMOS, László, dr.

On stenosing tenosynovitis in children. Gyermekgyógyászat 11 no.11:  
349-352 B '60.

1. A Pécsi Tudományegyetem Gyermek-Klinikájának (Igazgató: Kerpel-  
Fronius Odon dr. egyet.tanár) közleménye.  
(TENOSYNOVITIS in inf & child)

PILASZANOVICH I. Dr.

HALMOS, Iaszlo, Dr.; PILASZANOVICH, Imre, Dr.

Meconium peritonitis. Orv. hetil. 99 no.22:735-736 1 June 58.

1. A Peci Orvostudományi Egyetem Gyermekklinikájának (igazgató: Kerpel-Fronius Odon dr. egyet. tanár) közleménye.

(PERITONITIS, in inf. & child  
meconium peritonitis (Hun))

(MECONIUM  
same)

(INFANT, NEWBORN, dis.  
same)

HALMOS, Laszlo; PIJASZANOVICH, Imre

Perforation of appendix caused by hog bristle in child. *Orvosi Hetilap*  
9 no.1-3:87-88 Jan-Mar 58.

1. A Pécsi Orvostudományi Egyetem Gyermekklinikajának (Igazgató: Kerpel-  
Fronius Odon dr. egyetemi tanár) közleménye.  
(APPENDIX, for. bodies  
hog bristle causing perf. in child (Hun))



PIIASZANOVICH, Imre, Dr.; HALMOS, Laszlo, Dr.

~~Current problems of childhood ileus (invagination). Orv. hetil. 99~~  
no.27:912-913 6 July 58.

1. A Pecsí Tudományegyetem Gyermekklinikájának (Igazgató: Kerpel-Fronius  
Odon dr. egyet. tanár) közleménye.

(INTUSSUSCEPTION, in inf. & child  
diag. & surg. (Hun))

PILASZANOVICH, Imre, dr.

Unusual case of renal rupture in a child. Magv. sebeszet 8  
no.2:141-143 Apr 55.

1. Pecsí Tudományegyetem Gyermek Klinikájának (Igazgató:  
Kerpel-Fronius, Odon dr. egyetemi tanár) közleménye.  
(KIDNEYS, rupture,  
in child, unusual case.)

HALMOS, Laszlo, dr.; PILASZANOVICH, Imre, dr.

Successful surgery in a case of unilateral polycystic kidney in a 1-day-old infant. Gyermekgyogyaszat 12 no.4:113-115 Ap '61.

1. A Pecszi Orvnstodomanyi Egyetem Gyermeklinikajanak (Igazgato: Kerpel-Fronius Odon dr. egyet. tanar) kozlemenye.

(INFANT NEWBORN dis)  
(KIDNEY DISEASES in inf & child)

PILASZANOVICH, Imre

Compression of the heart in hemopericardium — successful surgery  
in 2 children. . Rozhl. chir. 41 no.3:184-187 Mr '62.

1. Detska klinika, prednosta prof. dr. Kerpel Fronius, Pecs,  
Petikosteli, Madarsko Chirurgicke oddeleni, prednosta doc. dr.  
Pilaszanovich.

(HEART DISEASE in inf & child) (PERICARDIUM wds & inj)

PILASZANOVICH, Imre, dr.

Case of successive surgery in congenital sarcoma of the extremities.  
Gyermekgyógyászat 6 no.12:384-386 Dec 55.

1. A pécsi Tudományegyetem Gyermekklinikajának (igazgató: Kerpel-Fronius Odon dr. egyetemi tanár) közl.

(SARCOMA, in inf. & child

leg. congen., pathol. & surg. (Hun))

(LEO, neoplasms

sarcoma in infant, congen., pathol. & surg. (Hun))

PILASZANDVICH, Imre, dr.

Primary gangrenous cholecystitis in 24 month old infant.  
Orv. hetil. 97 no.35:977-979 26 Aug 56.

1. A Pecszi Orvostudományi Egyetem Gyermekklinikájának (igazgató:  
Kerpel-Fronius, Odon, dr. Egyetemi tanár) közleménye.  
(CHOLECYSTITIS, in inf. & child  
gangrenous, primary, in 2 year old inf., surg. (Hun))

PILASZANOVICH, Imre, dr.,; HALMOS, Laszlo, dr.

Current problems of intestinal obstruction in childhood. Orv.  
hetil. 96 no.46:1274-1277 13 Nov 55.

1. A Pecsí Tudományegyetem Gyermekklinikajának (igazgató: Kerpel-  
Fronius Odon dr. egyet. tanár) közleménye.

(INTESTINAL OBSTRUCTION, in infant and child  
diag. & surg.)

PILASZANOVICH, Imre, dr.

Treatment of persistent infra-auricular fistulae of the parotid gland. *Magy. sebészet* 7 no.4:313-317 Aug 54.

1. Pécsi Orvostudományi Egyetem Gyermekklinikájának (igazgató: Kerpel-Fronius Odon dr. egyet. tanár) és I. sz. Sebészeti Klinikájának (igazgató: Schmidt Lajos dr. egyet. tanár) közleménye.

(FISTULA

parotid gland, infra-auric., surg.)

(PAROTID GLAND, fistula

infra-auric., surg.)



PILASZANOVICH, Imre, dr.

Case of congenital diverticulum of the bladder in child.  
Magy. sebesset 7 no.3:216-218 June 54.

1. A Pécsi Orvostudományi Egyetem Gyermekklinikájának közleménye;  
igazgató: Kerpel-Fronius Odon dr. egyetemi tanár.  
(BLADDER, diverticula  
congen.)

PILASZANOVICH, I.

Experiences with lumbal anesthesia with special reference  
to the use of 5% percaïn solution. Magy. sebeszet 4 no.2:  
81-90 1951. (CIML 20:11)

1. Doctor. 2. Surgical Clinic (Director -- Prof. Dr. Lajos  
Schmidt), Pecs University.

BOROSTYANKOI, Ferenc, dr.; PILASZANOVICH, Tivadar, dr.

Unusually located multiple foreign bodies. Orv. hetil.  
98 no. 7-8:195-196 24 Feb 57.

1. A Tamasi Jarasi Tanacs Korhaza Pincehely, (Igazgato-  
Sebeszorvos: Pilaszanovich, Tivadar, dr.) Belosztalyanak  
(foorvos: Borostyankoi, Ferenc, dr.) es Sebeszetenek kozlemenye.

(FOREIGN BODIES

knitting needle fragments with unusual locations (Hun))

NAGY, Sandor, dr.; PILASZANOVICH, Tivadar, dr.

Unusual case of closed abdominal injury. Orv. hetil.  
98 no.21:564-565 26 May 57.

1. A Tamasi Jarasi Tanacs Korhaza, Pincehely (igazgato sebész  
forvos: Pilaszanovich, Tivadar, dr.) seb. osztalyanak kozlemenye.  
(OVARIES, cysts  
rupt., traumatic, surg. (Hun))

PILASZANOVICH, Tivadar, dr.

Topical administration of procaine in the site of inflamed area. Orv. hetil. 96 no.33:915-917 14 Aug 55.

1. Tamasi Jaras Korhaza Pincehely, Seveszeti Osztaluanak (igazgato sebess-foorvos: Pilaszanovich Tivadar dr.) koslemenye.

(PROCAINE, ther. use,  
inflamm., topical admin. (Hun))  
(INFLAMMATION, ther.  
procaine topical admin. (Hun))

PROCESSING AND PROPERTIES MODEL

1ST AND 2ND CODES

3RD AND 4TH CODES

*Am*

PILAT (A). *Cherry Coriolus hirsutus* (Wulf.) Quel. jako parazit ovocných stromů. [The polypore *Coriolus hirsutus* (Wulf.) Quel. as a parasite on fruit trees].—*Ochrana Rostlin*, x, 3, pp. 57-63, 5 figs., 1930.

A brief account is given of a serious trunk rot of cherry trees which was observed in 1930 by the author in the vicinity of Plzen [Pilsen, Bohemia], and the causal organism of which was identified as *Coriolus [Polystictus] hirsutus* [cf. *R.A.M.*, v, p. 303]. All the indications were that the fungus had first established itself saprophytically in mechanical injuries, mainly frost cracks in the trunks, whence it spread both radially and tangentially into the living tissues (including the cambium), which were killed in advance presumably by the excretion of toxic substances by the fungus. The heartwood was comparatively little attacked, but the sapwood was reduced to a soft, almost cheesy condition when wet, and became very brittle and friable when dry. After penetrating to a certain depth in the wood, the mycelium tended to grow towards the surface, killing new areas of the cambium above it in the process. The progress of the rot appeared to be fairly rapid; the crown of the affected trees at first died off only on the side above the lesions, but they were finally killed. Only adult trees were attacked, at the time when they were most productive. The

METALLURGICAL LITERATURE CLASSIFICATION

1ST AND 2ND CODES

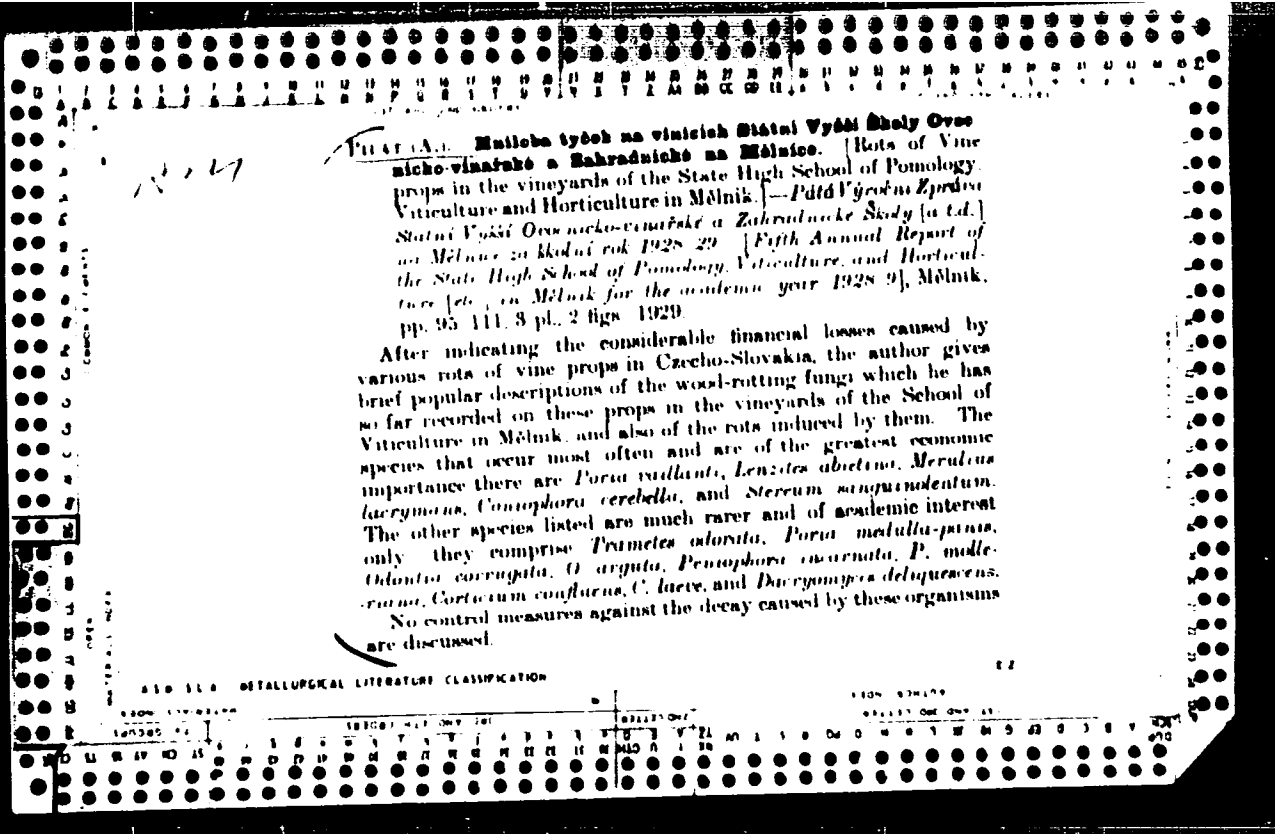
3RD AND 4TH CODES

fruiting bodies of the fungus formed at a certain height up the trunk were quite rudimentary and devoid of hymenium. Those formed lower down, and especially close to the soil were better developed and differentiated a hymenium, but remained sterile and differed considerably in shape and colour from the type species, in many respects resembling old hymenophores of *C. (P.) verrucosus*.

In the same locality and in the neighbourhood of Prague the fungus was also found attacking other fruit trees, chiefly apples on which the damage done by it was as serious as that on cherry trees. On the apple the fruiting bodies attained larger dimensions than on the cherry, and approached closer to the characters of the type species. The hymenium was entirely normal, and produced hyaline, cylindrical, frequently somewhat bent spores, 5 to 7 by 1.5 to 2.5 micrometer, borne on hyaline, clavate basidia measuring 12 to 15 by 4 to 5  $\mu$ .

For the control of the fungus it is recommended that all dead trees should be removed from

the orchards. Great care should be exercised not to leave in the orchards any kind of debris from the removed trees as it is thought probable that sawdust, wood chips and fragments of bark infected with mycelium may easily be blown about and thus spread the disease to healthy trees. In cherry orchards the removal of the badly diseased trees is also recommended.





PILAT, ALBERT.

"Hymenomyces novi vel minus cogniti Cechoslovakiae, II. Praha, Nakl. Narodního musea, 1953. 109 p. (Prague. Narodni museum. Sbornik, vol. 9-B (1953) no. 2. botanica, no. 1) (New lesser-known Czechoslovak Hymenomyces. Vol. 2, illus.)

SO: East European Accessions List, Vol 3, No 8, Au 1954.

PILAT, A,

Mushrooms of Polana Mountain near Detva in Slovakia. p. 156. Prague.  
CASOPIS; ODDIL FRIRODOVEDNY. Vol. 123, no. 2, 1954.

SOURCE: East European Accessions List (EEAL), LC, Vol. 5, no. 3, March 1956.

PILAT, ALBERT

Hymenomyces novi vel minus cogniti Cechoslovakiae. Praha, Nakl. Narodniho musea, 1955. 31 P. (Prague. Narodni museum. Sbornik B: Prirodovedny, v. 11, no. 2) (New lesserknown Czechoslovak Hymenomyces. In Latin. illus.)

SOURCE: East European Accessions List, (EEAL) Library of Congress, Vol. 5, No. 8, August 1956.

Category : CZECHOSLOVAKIA - Plant Diseases. General Problems N 1

Abs Jour - Ref Zhur - Biol., No 6, March 1957, No 02922

Author . Filat

Title . Rust fungi -- Dangerous Plant Parasites.

Orig Pub Ziva. 1956, -, No 4, 122-125

Abstract . This is a popular scientific article on systematic position, origin, development cycle, and host-plants of some species of rust-fungi.

Card : 1/1

CZECHOSLOVAKIA / Cultivated Plants. Ornamental Plants. M

Abs Jour : Ref Zhur - Biologiya, No 6, 1959, No. 25143

Author : Pilat, A.  
Inst : Not given  
Title : Hardy Forsythia

Orig Pub : Ziva, 1957, 5, No 2, 52

Abstract : Out of 7 species of Forsythia, 6 grow in the southeastern part of Asia, China and Japan. Forsythia suspensa has been cultivated in Europe from the year of 1833, into which it had been imported (Holland) from Japan. In China, it grows in a wild state. In the pre-spring early frosts of 1956, the most resistant proved to be F. europaea.

Card 1/2

PILAT, ALBERT

CZECHOSLOVAKIA / Cultivated Plants. Ornamental Plants.

M

Abstr Jour : Ref Zhur - Biol., No 8, 1958, No 34893

Author : Pilat, Albert

Inst : Not given

Title : Mesembryanthemaceae - Interesting African Succulent  
Plants and their Cultivation

Orig Pub : Ziva, 1957, 5, #4, 134-137

Abstract : None given

Card 1/1

1471

- 167 -

P A C  
CZECHOSLOVAKIA/Plant Diseases. General Problems

1-1

Abs Jour : Ref Zhur - Biol., No 20, 1958, No 91926

Author : Blatny Ctibor, Pilát Albert

Inst : -

Title : Probability of the Existence of Viruses in Higher Mushrooms

Orig. Pub : Ceska mykol., 1957, 11, No 4, 205-211

Abstract : A survey. So far there is no direct proof of the virus diseases in mushrooms. It is possible that the disease of the meadow mushroom described by Atkinson in 1949 is caused by virus. Disease of *Leccaria amoethina* (Bulf. et Fr.) Berk. or Br. described by Nešetil in 1940 should be included in the same group. He succeeded by means of a filtrate in transferring the agent to healthy specimens of the same variety. It is believed that some anomalies encountered in higher mushrooms are caused by viruses. The bibliography lists 16 titles.  
-- V.S. Grahul'

Card : 1/1

CZECHOSLOVAKIA / Plant Diseases--Forest Trees

0-2

Abs Jour: Ref Zhur-Biologiya, No 16, 1958, 73281

Author : Pilat, Albert

Inst : ~~Not given~~

Title : Witch's Broom [Fungus Virus Disease] in Fir  
(*Melampsorella caryophyllacearum*)

Orig Pub: Casop. Narodn. musea. Odd. Prirodoved., 1957,  
126, No 2, 189-191

Abstract: No abstract.

Card 1/1



PILAT, ALBERT

(Our mushrooms. 1st ed. col. illus., indexes)

Monthly list of East European Accessions (EEAI), LC, Vol. 3, No. 6, Jun 59, Unclass

PILAT, A.

Clavariaceae from Belanske Tatry. p. 111.

Prague, Narodni museum. SBORNIK. RADA B: PRIRODNI VEDY. ACTA. SERIES F: HISTORIA  
NATURALIS. Praha, Czechoslovakia. Vol. 15, no. 2, 1959.

Monthly list of East European Accessions (EEAI), LC, Vol. 8, no. 12, December 1959,  
Uncl.

PIIAT, Cornel, ing.

Spectral analysis of diesel oil and its importance. Rev. 1964.  
Ser 12 no. 12:713-714 L '64.

PILAT, Cornel, dr., ing.

Causes contributing to a decreased efficiency of the scaling solvent in the water of a locomotive boiler. Rev cailor fer 9 no.12:626-628 D '61.

1. Serviciul T regional Craiova.

(Locomotive boilers) (Cleaning compounds)

BASINSKI, Antoni; SIKORNA, Michalina; PILAT, Danuta

Studies on the mechanism of purification of silver halide  
sols by means of ion-exchangers. Pt.5. Roczniki chemii 37 no.1:  
201-206 '63.

1. Department of Physical Chemistry, Copernicus University,  
Torun.

ACCESSION NR: APL011732

S/0181/64/006/001/0025/0028

AUTHORS: Pilat, I. M.; Anaty\*chuk, L. I.

TITLE: Anisotropy of thermal conductivity in cadmium antimonide

SOURCE: Fizika tverdogo tela, v. 6, no. 1, 1964, 25-28

TOPIC TAGS: anisotropy, thermal conductivity, anisotropic thermal conductivity, cadmium antimonide, heat transfer, electron hole pair, electromagnetic radiation, diffusion

ABSTRACT: The studies were made in the temperature interval 100-420K. The setup for the experiments is shown in Fig. 1 on the Enclosures. Results of measurements in the  $[010]$  and  $[001]$  directions are almost identical, but the thermal conductivity along  $[100]$  is somewhat less. Results of measurements on two series of samples are shown in Fig. 2 on the Enclosures. It is concluded that at temperatures above 240K a substantial role is played by heat transfer through electromagnetic radiation and diffusion of electron-hole pairs. "In conclusion, the authors express their thanks to Professor A. G. Samoylovich for discussing the results and

Card 1/12

ACCESSION NR: AP4011732

also to A. N. Bort's for the measurements, which were made on an IKS-12." Orig. art. has: 4 figures.

ASSOCIATION: Chernovitskiy gosudarstvennyy universitet (Chernovtsy State University)

SUBMITTED: 13Jun63

DATE ACQ: 14Feb64

ENCL: 02

SUB CODE: PH

NO REF SOV: 003

OTHER: 009

Card 2/12

PILAT, I.M.; ANATYCHUK, L.I.

Properties of cadmium antimonide alloyed with gold. Fiz. tver. tela 5  
no.12:3616-3617 D '63. (MIRA 17:2)

1. Chernovi'skiy gosudarstvennyy universitet.



ACCESSION NR: AP4034939

S/0181/64/006/005/1528/1530

AUTHORS: Pilat, I. M.; Anaty\*chuk, L. I.

TITLE: Cadmium antimonide with indium impurities

SOURCE: Fizika tverdogo tela, v. 6, no. 5, 1964, 1528-1530

TOPIC TAGS: cadmium antimonide, sulfide group, electric conductivity, thermo-electric emf, Hall constant

ABSTRACT: The authors studied the effect of In impurities (0.01, 0.025, and 0.1%) on the electrical conductivity (up to 1000K), the thermoelectromotive force (up to 400K), and the Hall constant (up to 1000K) of CdSb. The conductivity and emf were measured in the [010] direction. The Hall constant was measured with the electric current along [010] and the magnetic field along [100]. The results are shown graphically in Figures 1-3 on the Enclosures. It was found that In impurities in CdSb give rise to deep donor levels with activation energies of 0.27-0.31 ev. At low impurity concentrations these levels are responsible for compensation of acceptor levels in the low-temperature range. Parts of the levels will be ionized, giving rise to both donor and acceptor levels with the same energy. At higher impurity concentrations donors become much more abundant

Card 1/5

ACCESSION NR: AP4034939.

than acceptors, and the type of conductivity changes. "In conclusion, the authors express their sincere thanks to Professor A. G. Samoylovich for his constant interest in the work and for his discussion of the experimental results." Orig. art. has: 3 figures.

ASSOCIATION: Chernovitskiy gosudarstvennyy universitet (Chernovtsy State University)

SUBMITTED: 23Dec63

DATE ACQ: 20May64

ENCL: 03

SUB CODE: EM, SS

NO REF SOV: 005

OTHER: 002

Card 2/5

ACCESSION NR: AP4034939

ENCLOSURE: 01

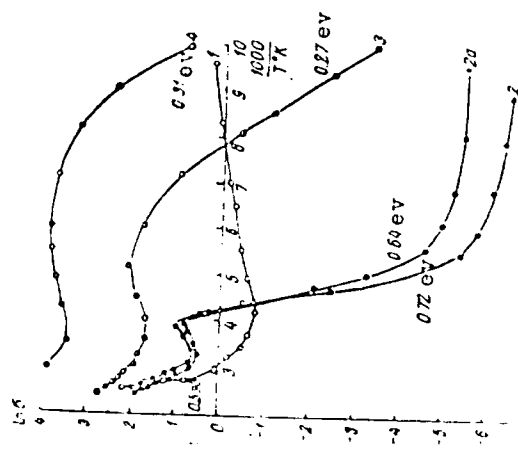


Fig. 1. Temperature dependence of electrical conductivity in CdSb with In impurities  
1- CdSb; 2 and 2a- CdSb + 0.01% In;  
3- CdSb + 0.027% In; 4- CdSb + 0.04% In.

3/5

ACCESSION NR: AP4034939

ENCLOSURE: 02

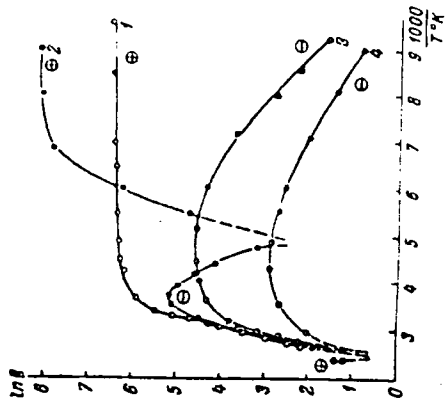


Fig. 2. Temperature dependence of the Hall constant in CdSb with impurities.

Card 4/5

ACCESSION NR: AP 4034939

ENCLOSURE: 03

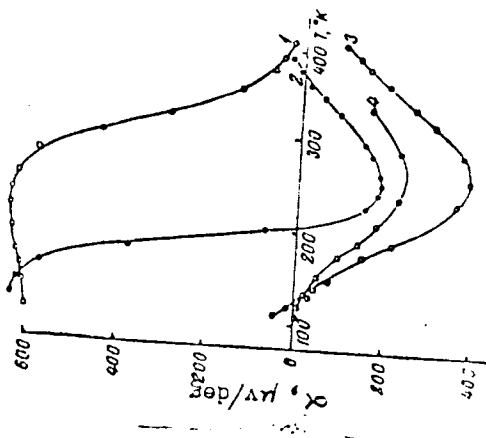


Fig. 3. Temperature dependence of the thermoelectric emf of CdSb with In impurities.

5/5

ACCESSION NR: AP4041372

S/0048/64/028/006/1040/1043

AUTHOR: Pilat, I.M.; Anaty<sup>\*</sup>chuk, L.I.

TITLE: Anisotropy of the heat conductivity of cadmium antimonide [Report, Third Conference on Semiconductor Compounds held in Kishinev 16 to 21 Sep 1963]

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v.28, no.6, 1964, 1040-1043

TOPIC TAGS: thermal conductivity, anisotropy, cadmium inorganic compound

ABSTRACT: The thermal conductivities in the  $\langle 100 \rangle$ ,  $\langle 010 \rangle$ , and  $\langle 001 \rangle$  directions of CdSb single crystals were measured at temperatures from 100 to 420°K. The Hall constants, electric conductivities, and thermal emf's of the specimens were also measured. The crystals were grown by the zone recrystallization method. Triply vacuum distilled cadmium and antimony were employed, and the impurity concentration in the final crystals did not exceed  $5 \times 10^{15} \text{ cm}^{-3}$ . All the specimens were p-type semiconductors. The thermal conductivities were measured with a steady state method. Radiation losses were minimized by establishing a temperature gradient in the side wall of the container equal to that in the sample. The thermal conductivities in the  $\langle 101 \rangle$  and  $\langle 001 \rangle$  directions were found to be equal and approximately twice that in

Card  
1/3

ACCESSION NR: AP4041372

the  $\langle 100 \rangle$  direction. The thermal conductivities were inversely proportional to the absolute temperature below  $200^{\circ}\text{K}$  and passed through a minimum and a maximum at approximately  $260$  and  $340^{\circ}\text{K}$ , respectively. The thermal conductivity in the  $\langle 010 \rangle$  and  $\langle 001 \rangle$  directions was  $12$  kilocal/cm sec  $^{\circ}\text{C}$  at  $100^{\circ}\text{K}$ , and the extreme values at  $260$  and  $340^{\circ}\text{K}$  were  $4.3$  and  $5$  kilocal/cm sec  $^{\circ}\text{C}$ , respectively. The deviations of the thermal conductivity from the inverse temperature law are ascribed to electron conduction, ambipolar diffusion of electrons and holes, and heat transport by electromagnetic radiation. The contribution to the heat conductivity of the electrons and holes was calculated by the formula of B.I. Davy\*dov and I.M. Shmushkevich (Uspekhi fiz.nauk 24, 21, 1940). The value of the infrared absorption coefficient required to account for the remaining heat conductivity by radiation according to the formula of L.Genzel (Z.Phys.135,177,1953) was calculated as a function of temperature and compared with values measured at three temperatures with a type IKS-12 spectrograph. Adequate agreement was found. "In conclusion, the authors express their gratitude to A.G.Samoylovich for discussing the results, and to A.N.Borts for the IKS-12 measurements." Orig.art.has; 2 formulas and 4 figures.

ca/8

ACCESSION NR: AP4041372

ASSOCIATION: none

SUBMITTED: 00

SUB CODE: SS, IC

NR REF SOV: 003

ENCL: 00

OTHER: 009

Card 3/3



PILAT, I. M.

USSR/Physics - Corpuscular Rays Jul/Aug 51

PA 195768

"Aberrations of Corpuscular Bunches of Arbitrary Shape in an Arbitrary Electrostatic Field," A. M. Strashkevich, I. M. Pilat, Chernovits State U

"Iz Ak Nauk SSSR, Ser Fiz" Vol XV, No 4, pp 448-466

General theory is presented in work by G. A. Grinberg (cf. "Zhur Tekh Fiz" 13, 1943; "Selected Problems of Mathematical Theory of Electric and Magnetic Phenomena" 1948. Authors derive trajectories of wide bunches in arbitrary electrostatic field and obtain expressions of total aberration in discussed

195768

USSR/Physics - Corpuscular Rays (Contd) Jul/Aug 51

case. Investigate aberrations in fields of cylindrical lenses and aberrations of 2d and 3d order in plane fields.

195768

PILAT, I. M.

193T95

USSR/Physics - Electron Microscope Oct 51

"Some Aberrations of Doubly Symmetrical Systems,"  
I. M. Pilat, E. Ye. Reznik, A. M. Strashkevich

"Zhur Tekh Fiz" Vol XXI, No 10, pp 1149-1152

Authors study electrooptical properties of electrostatic systems in order to reduce aberration in electron microscopes. Refer to their previous work (cf. "Iz Ak Nauk SSSR, Ser Fiz" Vol XV, No 4, 1951). Submitted 23 Aug 51.

193T95

SUBJECT USSR / PHILIPINES  
AUTHOR PILAT, I.M. CARD 1 / 2 PA - 1951  
TITLE The Electric Properties of the Intermetallic Compound CdSb.  
PERIODICAL Zhurn. techn. fis, 27, fasc. 1, 119-122 (1957)  
Issued: 2 / 1957

The present work investigates the electric properties of CdSb in dependence of admixtures. By a three- to four-fold distillation of cadmium and antimony in the vacuum very pure initial metals with less than 0,0001 % admixtures were obtained. The samples were produced by the amalgamation of Cd and Sb in evacuated thick-walled pyrex ampules, after which they were subjected to a special heat treatment. Within the temperature interval of up to 250° measurements of electric properties were steady and stable. The alloys were also molten according to zones. Sufficiently large monocrystals of the intermetallic compound CdSb were bred. Furthermore, samples with different contents of Cd and Sb as well as with admixtures of Al, Te, Pb and Sn were produced. On the basis of the samples produced in this manner the temperature dependence and the thermoelectromotoric force in the interval of from -180° to +250° were investigated by means of the usual compensation method. The domain of self-conductivity begins in the case of most samples with a deviation from the stoichiometric composition of 0,5-0,6% at from 60 to 70°, and activation energy amounted to 0,43-0,52 eV. At low temperatures activation energies of 0,0135, 0,0296 and 0,0695 eV were observed; specific electric conductivity at room temperature amounted to 0,5 - 1,0 ohm<sup>-1</sup> cm<sup>-1</sup>. With an increase of the surplus of a component a

AUTHOR: Pilat, I. M.

126-2-8/30

TITLE: Electrical and magnetic properties of the intermetallic compound CdSb. (Elektricheskiy i magnitnye svoystva intermetallicheskogo soyedineniya CdSb).

PERIODICAL: "Fizika Metallov i Metallovedeniye" (Physics of Metals and Metallurgy), Vol. IV, No. 2, 1957, pp. 232-238 (U.S.S.R.)

ABSTRACT: Results are reported of studies of electrical, magnetic, and rectifying properties of CdSb as functions of excess of Cd and Sb, and also of concentrations of impurities of aluminium, lead, tin, indium and tellurium. It is shown by other authors (1-4) that the CdSb lattice is rhombic and has 16 atoms in the unit cell. In the lattice each atom is surrounded by four other atoms, one of which is of the same kind as the central atom. The surrounding atoms are at the vertices of a deformed tetrahedron. The crystal lattice of CdSb is a deformed diamond lattice. According to Almin, K.E. (5) the interatom distances are:

Card 1/4

Cd - Cd	= 2.99 Å	
Sb - Sb	= 2.61 Å	
		Cd - Sb = { 2.80 Å
		2.81 Å
		2.91 Å

The angles between bonds are shown in Fig. 1.

Electrical and magnetic properties of the intermetallic compound CdSb. (Cont.)

126-2-8/30

In the present work measurements are reported between -180 C and +250 C. In specimens of stoichiometric composition intrinsic conductivity begins at room temperature. With a 0.5-0.5% departure from this composition the intrinsic conductivity begins at 60 to 70 C. Energy of activation of impurity conductivity lies in the range 0.07 - 0.03 eV. An excess of Cd or Sb relative to the stoichiometric composition does not change the sign of thermal e.m.f. and Hall's constant. The latter quantities are positive for all specimens. For specimens with Al impurity there is a characteristic change of sign of the thermal e.m.f. and the Hall constant near room temperature. The thermal conductivity of CdSb is small and comparable with that of glass (9). The coefficient of thermal conductivity decreases with increasing temperature (fig. 9). CdSb is weakly diamagnetic and its susceptibility is practically independent of temperature. Paramagnetism appears at high concentrations of impurities but at low concentrations the specimens remain diamagnetic. Rectifying properties were found in all the cases investigated. For example, specimens having

Card 2/4

Electrical and magnetic properties of the intermetallic compound CdSb. (Cont.)

126-2-8/30

an Al impurity of up to 0.4% have good diode properties, the coefficient of rectification can be of the order of  $10^3$ . Experimental results show that CdSb is a well conducting semi-conductor. This is most probably connected with the mainly covalent character of the cohesive forces in the lattice (10 and 11). The deformation of the diamond lattice in the case of CdSb, as compared with Ge, is explained by the fact that here we have a binary compound and that, compared with Ge and Si, to each pair of Cd and Sb atoms in the crystal there correspond 7 (instead of 8) valency electrons. The hole type of conductivity of CdSb must also be connected with the latter. The change in the sign of the thermal e.m.f. which was found on adding a small tellurium impurity depends undoubtedly on the change of the character of bonds in the lattice (cf. change of sign of the magnetic susceptibility; small carrier concentration, about  $1.2 \times 10^{18} \text{ cm}^{-3}$ ). Other impurities do not lead to such changes, except for tin, in which case the changes are connected with an increase in carrier concentration and not a change in the nature of the bonds. Electrical and magnetic properties of CdSb are

Card 3/4

L 15211-66 EWT(m)/T/EWP(t)/EWP(b) IJP(c) JD

ACC NR: AP6001297

SOURCE CODE: UR/0363/65/001/008/1320/1322

26  
B  
18

AUTHOR: Pilat, I. M.; Anatychuk, L. I.

ORG: Chernovtsky State University (Chernovitskiy gosudarstvennyy universitet)

TITLE: Thermal characteristics of the growing of <sup>21</sup>cadmium <sup>21</sup>antimonide single crystals

SOURCE: AN SSSR. Izvestiya. Neorganicheskiye materialy, v. 1, no. 8, 1965, 1320-1322

TOPIC TAGS: cadmium compound, antimony compound, single crystal growing, zone melting

ABSTRACT: A review of the literature shows that CdSb single crystals should be grown from a prehomogenized alloy, and that the temperature of the recrystallization should be in the 420-470C range. The authors grew CdSb single crystals by zone recrystallization with and without seeds. The ingot temperature was kept constant at 420C with  $\pm 0.5 - 1.0C$ . The temperature of the molten zone was no higher than 10 - 15C above the melting point of CdSb. The optimum growth rate was determined experimentally to be 2 - 4 cm/hr. Impurities were eliminated in the course of the growth. The homogeneity of the ingots obtained was demonstrated by measurements of the electrical conductivity along the single crystals. The anisotropy of the electric, thermoelectric, and galvanomagnetic properties of CdSb was closely studied at 90 - 420K. The data showed that the single crystals obtained were pure, thermally stable, and homogeneous. Authors thank Prof. A. G. Samoylov for his constant interest and assistance in the review of the results. Orig. art. has: 2 figures.

SWB CODE: 11,20 / SUBM DATE: 07Apr65 / ORIG REF: 008 / OTH REF: 008

1/1

UDC 546.48'861:548.55

PILAT, I. M.; ANATYUSHK, L. I.

Samuilovich with an interim assignment. No. 10. 1958-1960. 1958-1960. 1958-1960.

1. He previously had twenty-five children.



PILAT, I.M.; ANATYCHUK, L.I.

Anisotropy of the heat conductivity in cadmium antimonide,  
Izv. AN SSSR. Ser. fiz. 28 no. 10:1040-1043 Je '64,

(MIRA 17:7)

PILAT, I.M.; ANATYCHUK, L.I.

Anisotropy of the thermal conductivity of cadmium antimonide. Fiz.  
tver. tela 6 no.1:25-28 Ja '64. (MIRA 17:2)

1. Chernovitskiy gosudarstvennyy universitet.

PILAT, I.M.; ANATYCHUK, L.I.

Physical properties of some alloys of the system CdSb - ZnSb.  
Ukr. fiz. zhur. 8 no.7:756-761 J1 '63. (MIRA 16:8)

1. Chernovitskiy gosudarstvennyy universitet.  
(Cadmium-antimony-zinc alloys)

Magnetic properties of semiconductors. K. D. Tovstyuk.

This presentation consisted of the following papers:

Anisotropy of susceptibility of semiconductors. K. D. Tovstyuk, E. I. Stynko, I. M. Stakira, O. M. Boretz.

Magnetic and thermomagnetic properties of  $HgTe$ ,  $PbTe$ ,  $HgSe$ ,  $PbSe$ . K. D. Tovstyuk, M. P. Gavaleshko, Ya. S. Budznak, P. M. Starik, P. I. Voronyuk.

Magnetic susceptibility of  $CdTe$  and  $ZnTe$ . I. V. Potykevich, A. V. Sevitskiy.

Magnetic properties of the system  $HgTe-CdTe$ . K. D. Tovstyuk, I. M. Rarenko, I. V. Potykevich.

Anisotropy of the thermal conductivity of  $CdSb$ . I. M. Pilat, L. I. Anatychnuk.

Electrical, magnetic, and optical properties of the system  $In_2Te_3-CdTe$ . I. V. Potykevich, A. I. Boronov, O. M. Boretz.

Properties of crystals of  $CdSb$  doped with elements of groups IV and VI.

PILAT, I.M.; ANATYCHUK, L.I.; LYUBCHENKO, A.V.

Thermal conductivity of cadmium antimonide. Fiz. tver. tela 4  
no.6:1649-1654 Je '62. (MIRA 16:5)

1. Chernovitskiy gosudarstvennyy universitet.  
(Cadmium antimonide--Thermal properties)

S/081/62/000/010/005/085  
B158/B144

AUTHOR: Pilat, I. M.

TITLE: Type of conductivity and nature of the chemical bond of cadmium antimonide

PERIODICAL: Referativnyi zhurnal. Khimiya, no. 10, 1962, 35, abstract 10B216 (Sb. "Vopr. metallurgii i fiz. poluprovodnikov", M., AN SSSR, 1961, 81-87)

TEXT: On the basis of experimental investigations of electrical conductivity, thermo-e.m.f., Hall constant, magnetic susceptibility, coefficient of heat conductivity, and of the rectifying properties of stoichiometric samples of CdSb and of samples deviating from the stoichiometric composition as well as of CdSb samples containing Cu, Ag, Zn, In, Al, Pb, Sn, and Te impurities, it is established that the conductivity sign of the samples studied is determined by the valency rule. If the valency of the impurities introduced is lower than or equal to the lowest valency of the components of the compound, then the samples have p-type conductivity with all impurity concentrations. If the valency of

Card 1/2

Type of conductivity and...

S/081/62,000 010 008/08  
B148/B144

the valency is higher than the valency of the component of highest valency, then a small concentration of impurity results in samples having n-conductivity. Published data on possible systems of valence bands of CdS<sub>2</sub> are reviewed. A model proposed for the energy levels made it possible to explain the hole character of CdSb conductivity and to obtain a qualitative agreement with the experimental temperature dependence of electrical conductivity, thermo-e.m.f., and Hall constant. [Abstracter's note Complete translation.]

Card 2/2

S/181/62/004/006/041/051  
B108/B138

AUTHORS: Pilat, I. M., Anatyuk, L. I., and Lyubchenko, A. V.

TITLE: Heat conductivity of cadmium antimonide

PERIODICAL: Fizika tverdogo tela, v. 4, no. 6, 1962, 1649-1654

TEXT: The temperature dependences of the coefficient  $\kappa$  of heat conduction, electrical conductivity  $\sigma$ , thermo-emf  $\alpha$ , and Hall constant of p-type CdSb single crystals were measured in the range of 77-420°K.  $\kappa$  was measured with thermocouples in a steady flow of heat (Ye. D. Devyatkova, I. A. Smirnov. ZhTF, 27, 1944, 1957). At low temperatures heat conduction is mainly due to the phonon mechanism. This was confirmed by the hyperbolic  $\kappa$ -versus-T curves. At high temperatures, however, a rise in  $\kappa$  of CdSb single crystals was observed. This appears to be due to the transmission of infrared light at high temperatures. There are 6 figures and 1 table.

ASSOCIATION: Chernovitskiy gosudarstvennyy universitet (Chernovtsy State University)

SUBMITTED: November 29, 1961 (initially)  
February 22, 1962 (after revision)

Card 1/1



24 7000 (1137, 1144, 1385)

30418

S/058/61/000/009/040/050  
A001/A101

**AUTHORS:** Pilat, I.M., Shuman, V.B.

**TITLE:** Magnetic susceptibility of intermetallic compounds of CdSb with admixture of In

**PERIODICAL:** Referativnyy zhurnal. Fizika, no. 9, 1961, 228, abstract 9E410 ("Nauchn. yezhegodnik za 1957. Chernovitsk. un-t", Chernovtsy, 1958, 478 - 479)

**TEXT:** The temperature dependence of magnetic susceptibility  $\chi$  of the following compounds was studied in the temperature range from 20 to 220°C; 1) CdSb + 0.02% In, 2) CdSb + 0.1% In, and 3) CdSb + 1% In. All investigated specimens are diamagnetic, and diamagnetism grows with temperature. The introduction of 0.02% In changes the sign of conductivity, but  $\chi$  does not change, because the concentration of current carriers remains almost the same. It is established that the main contribution into magnetic susceptibility at room temperature is provided by CdSb lattice. With the rise of In concentration in the specimen, the growth of  $\chi$  with temperature increases. Values of activation

Card 1/2

30418

S/058/61/000/009/040/050  
A001/A101

Magnetic susceptibility ...

energy  $\Delta E$ , calculated from electric and magnetic measurements in the temperature range up to  $100^{\circ}\text{C}$ , are equal, which points to the effect of the growth of current carrier concentration on increase of  $\chi$ . Effective masses of carriers are estimated:  $m^*_p < 0.576 m_0$  and  $m^*_n < 0.576 m_0$ , where  $m_0$  is the value of free electron.

N. Smol'kov

[Abstracter's note: Complete translation]

Card 2/2

24,7700(1035,1855,1559)

0795  
S757675 / 000700070 / 001  
E03575111

AUTHOR P. I. L. M.

TITLE On the nature of conduction and of the thermomagnetic effect in adm. am. antimonide

SOURCE Sevashchikova, N. P. *Uprav. dokl. vuz. mater. akad. nauk SSSR. Voprosy metallurgii*, 1972, K. 1, p. 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000.

TEXT This paper reports that comprehensive measurements have been made of the electrical conductivity, thermoelectric Hall constant, magnetic susceptibility, thermal conductivity, and Hall effect properties of CdS<sub>1-x</sub>Te<sub>x</sub>. These have been carried out on samples of various compositions. From these results it is possible to draw some conclusions regarding the energy band structure and the conduction mechanism in CdS. The electrical conductivity, Hall constant, and thermoelectric effect were measured by the usual compensation methods. The magnetic susceptibility was carried out.



2024-4-26/2004/01  
FOIA(b)(7)

of the nature of the...

the rate of...

Form...

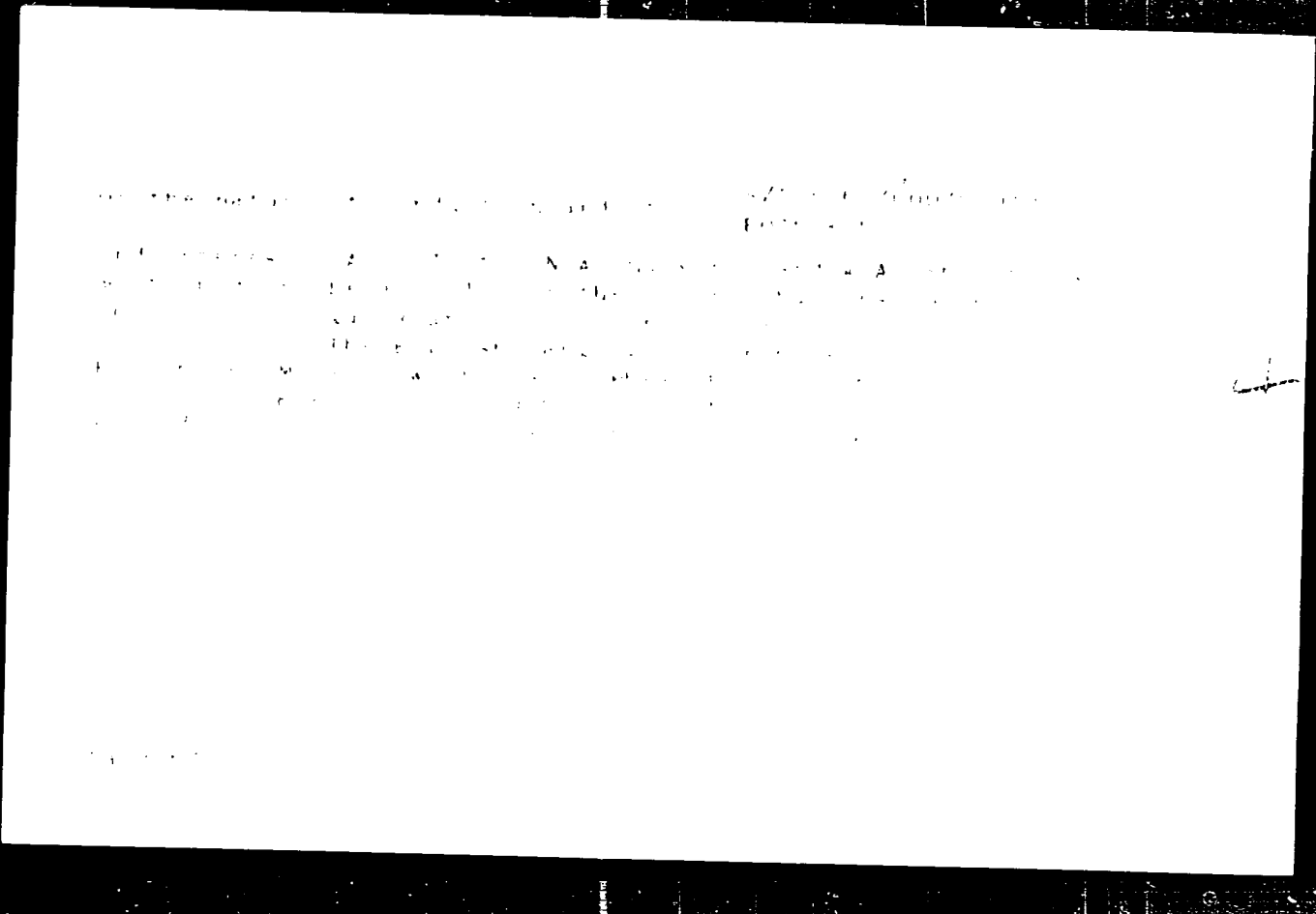
As...

...

Sample... and A...  
 a less than...  
 the comp...  
 quan...  
 St...  
 as...  
 then...  
 experimental...  
 and...  
 Each...  
 attached...  
 card 177









On the nature of conduction and of ...

S/576/61/000/000/010/000  
E.036/E.162

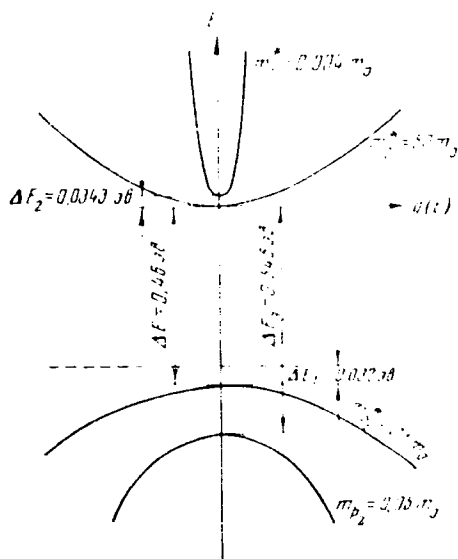


Fig.5

Card 7/7

PILAT, I.M.; BORODINETS, G.S.; KOSYACHENKO, L.A.; MAYKO, V.I.

Some properties of the system CdSb -- ZnSb. Fiz.tver.tele 2  
no.7:1522-1525 J1 60. (MIRA 13:8)

1. Gosudarstvennyy universitet, Chernovtsy.  
(Zinc antimonide)  
(Cadmium antimonide)

S/1P1/60/002/007/021/042  
R006/R060

AUTHORS: Pilat, I. M., Borodinets, G. S., Kosyachenko, L. A.,  
Mayko, V. I.

TITLE: Some Properties of the System CdSb - ZnSb

PERIODICAL: Fizika tverdogo tela, 1960. Vol. 2, No 7. pp. 1522 1525

TEXT: The physical properties of the system CdSb - ZnSb were already previously studied, but results differed, since the temperature conditions during the melting of the initial components were not uniform. Here, the authors report on new experiments made on five specimens (at a ratio of almost 1:1 of the initial components). The following were measured: temperature dependence of the electrical conductivity  $\sigma$ , the thermo-emf  $\alpha$ , the Hall constant  $R$ , and the coefficient of thermal conductivity  $\kappa$  in the range from room temperature to 200°C. Fig 1 shows the isothermal lines of thermal conductivity for five different temperatures as a function of the composition of the specimens investigated. The lower the temperature, the more marked is the maximum arising in composition 1. The numbers on the abscissa from 1 ... 5 denote the numbers of the specimens, whose composition is

Card 1/3

Some Properties of the System CdSb - ZnSb

S/181/60/002/007/021/042  
B006/B060

Given in Table 1. Figs. 2 and 3 show the isothermal lines of  $\alpha$ ,  $\alpha$ , R, and  $\sigma$  as well as of the activation energy ( $\Delta E$ ) as a function of the composition of the specimens, at 70°C (Fig. 2) and at 130°C (Fig. 3). In the composition 1 (i.e., 50% CdSb + 50% ZnSb) R,  $\alpha$ ,  $\Delta E$  have a maximum.  $\sigma$  has a minimum. Of these specimens, microstructure and microhardness were also studied. For the analysis of microstructure the specimens were ground, polished, and etched with three different agents. The characteristic structure obtained for composition 1 is shown in Fig. 4, while Fig. 5 shows that of composition 2. Composition 1 exhibits inclusions of excess antimony. Microhardness for these inclusions amounted to 89 ± 93 kg/mm<sup>2</sup> (which corresponds to the value for Sb); the main phase had a hardness of 154 kg/mm<sup>2</sup>, which corresponds neither to that of the initial components nor to that of their binary compounds. Compositions 2 and 4 showed a microstructure corresponding to that of the eutectic. It can be concluded from the results that composition 1 forms an ordered solid solution or the chemical composition ZnCdSb<sub>2</sub>. The results of an X-ray structural study (Table 2) led to the result that the phase arising with composition 1 possesses properties which considerably differ from those of the binary initial compounds. The authors finally thank V. I. Psarev Candidate of Technical Sciences for his

Card 2/3

Some Properties of the System CdSb - ZnSb

S/181/60/002/007/021/042  
B006/B060

assistance in the metallographic analysis. There are 5 figures, 2 tables,  
and 5 references: 4 Soviet and 1 Czechoslovakian.

ASSOCIATION: Gosudarstvennyy universitet Chernovtsy  
(Chernovtsy State University)

SUBMITTED: November 5, 1959

Card 3/3

ILAT, I. M. Cond. Phys. - Chernovtsy. "Study of the electrical and magnetic properties of antimonous cadmium." Chernovtsy, 1976. (Min of Higher Education USSR. Chernovtsy State Univ. Chair of Physics of Semiconductors, 1976 series. Bibliography at end of text (sl. 1-1, 2-1, 3-1))

PILAT, I.M.; ISKRA, V.D.; SHUMAN, V.B.

Electric properties of the intermetallic compounds CdSb with  
indium impurities. Fiz. tver. tela 1 no.3:393-396 Mr '59.  
(MIRA 12:5)

1. Chernovitskiy gosudarstvennyy universitet.  
(Cadmium antimonide--Electric properties)

AUTHORS: Pilat, I. M., Chizh, L. D., Voytyshen, S. Yu. 57-28-4-12/33

TITLE: Electric and Magnetic Properties of the ZnSb-CdSb System  
(Elektricheskiye i magnitnyye svoystva sistemy ZnSb-CdSb)

PERIODICAL: Zhurnal Tekhnicheskoy Fiziki, 1958. Vol. 28, Nr. 4. pp. 786-788  
(USSR)

ABSTRACT: The physical properties of the Zn-Sb-Cd system were here investigated according to the pseudobinary section of the concentration-triangle. Spectrally pure Zn, Sb and Cd was used for the production of the samples, which was obtained by means of repeated distillation in a vacuum. The electric conductivity, the thermoelectric force and the Hall effect were measured in a usual compensation-circuit. The magnetizability was measured according to the Dorfman-Sidorov method (reference 8). The electric conductivity increases in all investigated samples with a rise of temperature. The activation energy changes in the domain of from 0.26 to 0.42 eV in dependence on the composition. The minimum for the isothermal lines of electric conductivity and the maximum of the activation energy in the domain of concentration corresponding to the CdSb+ZnSb-composition are characteristic. In the same domain the

Card 1/3



Electric and Magnetic Properties of the ZnSb-CdSb System

57 28-4-19/39

maximum of mobility, the minimum of magnetizability and the maximum of the thermodynamic force are observed. The magnetizability is practically independent of temperature, i.e. it is due to the absorption capacity of the lattice itself. This is also confirmed by the fact that the concentration of current carriers calculated from the Hall effect is not high ( $\sim 10^{18} \text{ cm}^{-3}$ ). The Hall constant and the thermal e.m.f. in all samples had a positive sign. On an increase in the Cd-content a modification of the nature of the temperature-dependence in the thermal e.m.f. is observed. On the basis of the measurement results given it may be concluded that the ZnSb-CdSb system forms a series of solid solutions with semiconductor properties. The occurrence of strongly marked extreme values of physical characteristics in sample no. 6 (CdSb+ZnSb with 25 atomic% Cd, 25 atomic% Zn and 50 atomic% Sb) makes assume the formation of the chemical compound  $\text{ZnCdSb}_2$ . A. G. Samoylovich, Professor and L. L. Korenblit, Candidate of Physical-Mathematical Sciences showed continuous interest for this work. There are 4 figures, 1 table, and 6 references, 5 of which are Soviet.

Card 2/3

Electric and Magnetic Properties of the ZnSb-CdSb System

57-28-4-13/33

ASSOCIATION: Chernovitskiy gosudarstvennyy universitet  
(Chernovtsy State University)

SUBMITTED: November 14, 1957

AVAILABLE: Library of Congress

Card 3/3

*Pilat, I.M.*  
USSR/Electricity - Semiconductors

G-3

Abs Jour : Ref Zhur - Fizika, No 1, 1958, 1334

Author : Pilat, I.M.

Inst : Chernovtsy University

Title : Electric Properties of the Intermetallic Compounds CdSb.

Orig Pub : Zh. tekhn. fiziki, 1957, 27, No 1, 119-122

Abstract : The intermetallic compound CdSb a rhombic lattice, in which each atom of one kind is surrounded by three atoms of another kind and one of the same kind, as the central ones, and these occupy the corners of a deformed tetrahedron. The lattice of CdSb can be assumed to be a strongly distorted lattice of diamond. The interatomic distances Cd-Cd, Sb-Sb, and Cd-Sb are determined. The author describes the investigation of the electric properties (electric conductivity and thermal emf from -180 to +250° C),

C Card 1/4

Card 3/4

USSR/Electricity - Semiconductors

Abs Jour : Ref Zhur - Fizika, No. 1958, 1334

G-3

Rectification with CdSb is of the low-voltage type (up to 1 v). Also observed is an amplification, which reaches a maximum value in specimens with an aluminum impurity. It is proposed that by means of surface treatment it is possible to improve the rectifying characteristics of CdSb.

Card 4/4

PIL.P, I.M.; CHIZH, L.D.; VOITYSHIN, S.Yu.

Electric and magnetic properties of the ZnSb - CdSb system. Zhur.  
tekh. fiz. 28 no.4:786-788 Ap '58. (MIRA 11:4)

1. Chernovitskiy gosudarstvennyy universitet.  
(Zinc-antimony-cadmium alloys)

PHATIM

6615. ELECTRICAL PROPERTIES OF THE INTERMETALLIC COMPOUND  $Cd_{1-x}Sb_x$  I.M. Felsl

537.311.33 : 537.223

4E22

Zh. tekh. Fiz., Vol. 27, No. 1, 119-22 (1957). In Russian.

From Cd and Sb containing  $10^{-4}\%$  impurity single crystals of  $CdSb$  were prepared with various departures from stoichiometric composition and containing various quantities of Al, Te, Pb or Sn. The electrical conductivity ( $\sigma$ ) was measured in the temperature range 90-520°K; at 520°K an irreversible change occurred. For specimens with composition differing by 0-0.8% from stoichiometric the activation energy was 0.43-0.62 eV; intrinsic conductivity began at 60-70°K. Low temperature measurements showed up activation energies of 0.0135, 0.0298 and 0.0695 eV. At room temperature  $\sigma = 0.9-1.0 \text{ ohm}^{-1} \text{ cm}^{-1}$ . Large departures from stoichiometry gave a region with positive temperature coefficient of resistance. For specimens close to stoichiometric the thermal e.m.f. ( $\alpha$ ) against Cu reached 350 V/°C.  $\alpha$  fell rapidly with increasing departure from stoichiometry. Of the dopes listed above, the most interesting was Pb, which in concentration of 0.000% changed the conductivity to n-type with activation energy 0.065 (290-380°K) and 0.40 eV (380-500°K). Diode and triode properties of  $CdSb$  crystals with the various dopes were also investigated.

A. F. Brown

*via PM/RS*  
MT

PILAT, I.M.

Electrical and magnetic properties of a CdSb intermetallic  
compound. Fiz.met.1 metalloved. no.2:242-248 '57.

1. Chernovitskiy gosudarstvennyy universitet.  
(Cadmium-antimony alloys,  
metal crystals)

HEAT, I.N.

[Tourist route, ...  
Moldavia. Highnev, ...]



PILAT, I.N.; ANDREYCHUK, N., red.

[Do you know Kishinev?] Znaesh' li ty Kishinev? Kishinev,  
Kartia Moldoveniaske, 1964. 37 p. (MIRA 17:6)

ACC NR: AP6032835

(A)

SOURCE CODE: CZ/0078/66/000/007/0022/0022

INVENTOR: Burianek, R. (Engineer; Prague); Pilat, J. (Engineer; Prague)

ORG: none

TITLE: Ignition device for combustion engine. CZ Pat. No..PV 6602-64

SOURCE: Vynalezky, no. 7, 1966, 22

TOPIC TAGS: internal combustion engine, ignition, igniter, *ENGINE IGNITION SYSTEM*

ABSTRACT: The proposed ignition device for combustion engines containing transistors consists of a main circuit connected to a power source, which contains primary windings of the ignition coil, an emitter and collector of the main transistor, and a nonlinear resistance in series, such as an electric bulb filament. The conductivity of the filament decreases with increasing voltage and intensity of the passing current.

SUB CODE: 21/ SUBM DATE: 26Nov64/

Card 1/1

LILIS, R., dr.; PILAT, L., dr.

Chronic occupational carbon monoxide poisoning. Med. intern.  
16 no.2:139-146 F'64

1. Clinica de boli profesionale a Institutului de igiena si  
protectia muncii al R.P.R., Bucuresti.

\*

PILAT, L. dr.; CRACIUN, O. dr.

Radiology of the initial stages of silicosis. Med. intern. 16  
no.1:67-72 Ja'64

1. Lucrare efectuata in Clinica de boli profesionale a I.M.F.,  
Bucuresti si a Institutului de igiena si protectia muncii al  
R.P.R.

\*