"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9

PROTOD'YAKONOVA, Z.M.

Mineralogical composition of some kaolin rocks from Urda-Bashi. Trudy Sred.-Az.politekh.inst. no.12:54-58 '61.

(MIRA 18:12)

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9

PROTOKHRISTOV, D.; ARMENKOV, At.; ALVADZHIEV, M.

On non-traumatic surgical methods in the treatment of inguinal hernia. Folia med. (Plovdiv) 7 no.3:161-165 '65.

1. Vysshiy meditsinskiy institut imeni Iv.P. Pavlova, g. Plovdiv, Bolgariya, kafedra gospital'noy khirurgii na baze k l-voy gorodskoy bol'nitse (rukovoditel' - prof. L.Khaydudov).

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9

PROTOKHRISTOV, D.; ARMENKOV, At.

On the treatment of anal fistulae. Khirurgiia 15 no.9/10:950 '62.

1. Iz Katedrata po bolnichna khirurgiia pri VMI [Vissh meditsinski institut] "I.P. Pavlov" - Plovdiv.
(FISSURE IN ANO)

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9

PROTOKHRISTEV, P

RIMALOVSKI; IVANOV, N.; PROTOKHRISTEV, P.

Case of mesenterium ileocolicum communae. Khirurgiia, Sofia 9 no.10:937-939 1956.

1. Iz I poliklinika, Plovdiv.
(MESENTERIES, abnorm.
common ileocolic mesentery (Bul))

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9

ANDREEV, Iv.; VAPTSAROV, Iv.; MIKHOV, Iv.; ANGELOV, A.; YEVGENIYEV, Ye. [Evgeniev, E., translator]; PROTOKHRISTOV, T. [translator]; KLYUS, B. [Klius, B., translator]; TALAKOV, A., red.; RUSINOV, N., tekhn. red.

[Differential diagnosis of the most important symptoms of children's diseases] Differentsial'naia diagnostika vazhneishikh simptomov detskikh boleznei. Red. A.Talakov. Plovdiv, Gos.izd-vo im. Khristo G. Danova, 1962. 431 p. (MIRA 16:5)
(CHILDREN--DISEASES) (DIAGNOSIS, DIFFERENTIAL)

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9

TRET'YAKOVA, A.F.; PROTOKLITOVA, N.S., starshiy nauchnyy sotrudnik

Clinical picture of atypical forms of Botkin's disease in children according to data of the hepatitis department of the Fourth Municipal Hospital and the department for infectious diseases at the Pediatrics Institute of the Ministry of Public Health of the R.S.F.S.R., for 1959-1960. Nauch.trudy Chetv.Mosk.gor.klin. bol'. no.1:57-65 '61. (MIRA 16:2)

1. Glavnyy vrach Moskovskoy gorodskoy klinicheskoy bol'nitsy G.F. Papko, direktor Pediatricheskogo instituta Ministerstva zdravookhraneniya RSFSR doktor med.nauk A.P. Chernikova. Zamestitel' glavnogo vrach Moskovskoy gorodskoy klinicheskoy bol'nitsy A.F. Tret'yakova.

(HEPATITIS, INFECTIOUS)

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9

PROTOKLITOVA, N.S.; RUDENSKAYA, I.N.

Infectious hepatitis in children. Med.sestra no.6:35-40 Je '62. (MIRA 15:8)

1. Iz infektsionnogo otdela Nauchno-issledovatel'skogo pediatricheskogo instituta, Moskva.
(HEPATITIS, INFECTIOUS)

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9

PROTOKLITOVA, Natal'ya Sergeyevna; kand. med. nauk; RUDENSKAYA, Izol'da Nikolayevna, kand. med. nauk; POTAPOVA, I.N., red.; BASHMAKOV, G.M., tekhn. red.

[Botkin's disease in children]Bolezn' Botkina u detei. Moskva, Medgiz, 1962. 12 p. (MIRA 16:1)
(HEPATITIS, INFECTIOUS)

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9

PROTOKLITOVA, N.S.

Methods for using antibiotics in treating diphtheria in children. Pediatriia 37 no.5:89 My '59. (MIRA 12:8)

1. Iz infektsionno otdela Nauchno-issledovatel'skogo pediatricheskogo instituta Ministerstva zdravookhraneniya RSFSR.
(ANTIBIOTICS) (DIPHTHERIA)

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9

PROTOKLITOVA, N. S.

PROTOKLITOVA, N. S. "The Effectiveness of Using Antibiotics in Treating Dysentery of Young Children." Min Health RSFSR. State Sci Res Pediatrics Inst. Moscow, 1956. (Dissertation for the Degree of Candidate in Medical Science)

So: Knizhnaya Letopis', No. 19, 1956.

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9

PROTOKLITOVA, N.S.; MINKINA, V.A.

Dispensary treatment of convalescents following dysentery. Vop.okh. mat. i det. 1 no.2:70-74 Mr-Ap '56. (MIRA 9:9)

1. Iz otdela ostrykh detskikh infektsiy (zav.-prof. B.G.Shirvindt) i otdela organizatsii zdravookhraneniya (zav.-prof. A.G.TSeytlin) Nauchno-issledovatel'skogo pediatricheskogo instituta (dir. V.N. Karachevtseva) Moskva.
(DYSENTERY)

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9

SHEVNIDT, B.G., prof.; PROTOKLITOVA, N.S., kand. med. nauk

Scientific Session on Botkin's Disease at the Moscow Scientific Research Pediatric Institute of the Ministry of Public Health of the R.S.F.S.R. and the Pediatrics Problem Commission of the Academic Medical Council of the R.S.F.S.R. Vop. okh. mat. i det. 8 no.7:89-92 Jl '63. (MIRA 17:2)

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9

PROTOKLITOVA, T.B.

Forage plants for Japanese deer of the Khoper Preserve. Trudy Khop.gos.zap. no.5:139-172 '61. (MIRA 16:2)
(Khoper Preserve--Deer--Feeding and feeds)
(Khoper Preserve--Forage plants)

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9

PROTOKLITOVA, T.B.

Supplement to the flora of the Khoper Preserve. Trudy Khop. gos.zap. no.5:191-192 '61. (MIRA 16:2)
(Khoper Preserve--Botany)

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9

CATEGORY : Forestry. Forest Biology and Typology.

ABS. JOUR. : Ref Zhur -Biologiya, No. 5, 1959, No. 20139

AUTHOR : Proteklitova, T.B.

INST. : Saratov State Pedagogical Institute

TITLE : Forests of the Southern Districts along the Saratov Right Bank and Their Botanico-Geographic Features and Renewal.

ORIG. PUB.: Uch. zap. Saratovsk. gos. ped. in-t, 1957, vyp. 28, 248-276

ABSTRACT : The results are analyzed of studies made in the forests of Bol'she-Dmitriyevskiy Leshhoz (Saratovskaya Oblast) outside the flood plain during 1952-1954. The forest flora is composed of 346 species. Seventeen of these are dominant. Among the tree and shrub species oak, Tatarian maple and wartybark euonymus are widespread. Photophilous forest and meadow-steppe species participate heavily in the make-up of the forest grass cover: Japa-

CARD: 1/3

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9

COUNTRY :
SUBJECT :

ABS. SOUR.: Ref Zhur-Biologiya, No. , 1959, No. 20119

AUTHOR :
INST. :
TITLE :

ORIG. PUB.:

ABSTRACT : nese falsebrome (Brachypodium pinnatum), Mediterranean chrysanthemum, dew grass, yellow bedstraw, choc reedgrass, Kentucky bluegrass (Poa pratensis angustifolia sm.), and bent sedge (Carex supina Willd.). The Leskhoz forests are made up of of oak woods, linden groves, aspen groves and alder groves. The stands of these wood types are described. The grass cover and conditions of scrub regeneration in the oak woods are characterized.

CARD : 2/3

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9

TITLE :
CATEGORY :

ABS. JOUR : Ref Zhur-Biologiya, No, 5, 1959, No. 20119

AUTHOR :
INST. :
TITLE :

ORIG. PUB.:

ABSTRACT : When the hardwood stands are felled at the age of 51 - 60 years, good renewal conditions are provided for oak and linden.--I.K.Fortunatov

CARD: 3/3

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9

PROTOKLITOVA, T.B., aspirant

Forests in the south of the right-bank area of Saratov Province, their geobotanical characteristics and regeneration. Uch. zap. Sar. gos. pedag. inst. no.28:248-278 '57. (MIRA 11:7)
(Saratov Province--Forests and forestry)

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9

PROTOKLITOVA, T. B.: Master Biol Sci (diss) -- "The forest in the southern regions of the Saratov right-bank area, their botanical-geographical characteristics, and their restoration (The example of the Bol'she-Dmitriyevskiy Leskhoz)". Saratov, 1959. 16 pp (Saratov State U im N. G. Chernyshevskiy), 130 copies

(KL, No 12, 1959, 127)

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9

PROTOKOVITTS, A. A

COUNTRY : USSR
CATEGORY : Forestry. Forest Management. K

ABS. JOUR. : RZhBiol., No.23 1958, No. 104533

AUTHOR : Protokovitts, A. A.
INST.
TITLE : Forest Management Works in the Suburban Forest-Park Zone of Leningrad

ORIG. PUB. : Sb. statey po ustroystvu i obsledovaniyu lesov. L., 1958, 104-108
ABSTRACT : No abstract.

Card: 1/1

10

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9

PROTOMOV, Aleksey Ivanovich; GOR'KOVA, A.A., ved. red.; VORONOVA, V.V., tekhn. red.

[Technical equipment for the compressor stations of gas pipelines and its operation]Tekhnologicheskoe oborudovanie kompressornykh stantsii magistral'nykh gazoprovodov i ego ekspluatatsiia. Moskva, Gostoptekhizdat, 1962. 326 p. (MIRA 15:10)

(Gas, Natural—Pipelines) (Compressors)

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9

PROTOPOLOV, V. V.

Dissertation: "The Effect of Mechanized Lumbering on the Natural Restoration of Spruce Trees." Cand Agr Sci, Inst of Forestry Acad Sci USSR, 24 Jun 54. (Vecherniyaya Moskva, Moscow, 15 Jun 54)

SO: SUM 318, 23 Dec 1954

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9

PROTOPOPESCU, A.

4

27

Preparation of porous irons for bearings. C. Dan, O. Stefan and A. Protopopescu (*Studii Cerc. Metal., Bucharest*, 1956, 1, 325—337).—The prep. of porous Fe for bearings to be impregnated with oil, and the properties of the product, are described. J. S. C.

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9

PROTOPOPESCU, AURELIA

4
MJW(JD)
2

Distr: 4E2b(v)/4E2c(m)

The use of electrical resistivity for measuring the degree of sintering. Georgeta Dan and Aurelia Protopopescu. *J. Rev. roumaine méd., Acad. rép. populaire Roumaine* 5, 107-17 (1960).—Sintered samples of electrolytic Fe powder (<60 μ) were prepd. at a sp. pressure of 4 tons/sq. cm. The changes in the material taking place during sintering were detd. by measuring the elec. resistivity. A substantial resistivity decrease was noticed at temps. up to 500°, probably due to acid fibers. Slight changes in elec. resistivity were noticed between 500 and 1000°, presumably detd. by the d. increase. Typical resistivity values (in μ ohm-cm.) are: at 20°, 35,000; at 100°, 18,000; at 200°, 700; at 300°, 160; at 400°, 38; at 500°, 20; at 600°, 20; at 700°, 19; at 800°, 19; at 900°, 19; and at 1000°, 18.

K. E. Muller

MW

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9

RUMANIA

2

HUBER PANU, I.; PANDELESCU, C.; PROTOPOPESCU, A.

1. Corresponding Member of the Academy of the Rumanian People's Republic (for Huber Panu).

Bucharest, Studii si Cercetari de Metalurgie, No 3, 1963, pp 297-330

"Influence of Aeration on the Flotation of Very Finely Ground Ores."

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9

PROTOPOPESCU, A.

International Conference of Metallurgic Powders. Studii cerc metalurgie 8 no.2:231-33 '63

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9

HUBER-PANU, I.; PANDELESCU, C.; PROTOPOPESCU, A.

Studies on the influence of aeration on the flotation of very fine crushed minerals. Rev Roum metallurg 9 no. 1: 17-38 '64.

1. Correspondeing Member of the Rumanian Academy (for Huber-Panu).

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9

PANU, I.Huber; PANDELESCU, C.; PROTOPOPESCU, A.

Influence of aeration of the flotation of ores very finely ground. Studii cerc metalurgie 8 no.3:297-330 '63.

1. Membru corespondent al Academiei R.P.R.

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9

BOLGIU, O.; PROTOPOPESCU, A.; CRISTEA, S.

Sintering of copper and copper-aluminum powders as compared to the thermal evolution of copper. Studii cerc metalurgie 7 no.4:414-440 '62.

1. Membru al Comitetului de redactie, "Studii si cercetari de metalurgie" (for Bolgiu).

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9

OPRESCU, I., ing.; PROTOPOPESCU, A., ing.

Materials from oxidized aluminum powders resistant to high temperatures. Metalurgia constr mas 14 no.10:934-940 O '62.

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9

PROTOPOPESCU, Aurelia

"Hard metalloceramic alloys" by V.I. Tretiakov [Tret'yakov, V.I.]. Reviewed by Aurelia Protopopescu. Studii cerc metalurgie 7 no.4: 479-481 '62.

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9

PROTOPOPESCU, A.

"Cermets" by J.R. Tinklepaugh, W.B. Crandall. Reviewed by A. Protopopescu. Metalurgia constr mas 15 no.7:478 Jl '63.

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9

PROTOPOPESCU, A.

"Alloys on the basis of the difficultly fusible compounds"
by G.V. Samsonov and K.I. Portnoy. Reviewed by A. Protopopescu.
Studii cerc metalurgie 7 no.1:117-118 '62.

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9

PROTOPOPESCU A.

12 27

1. Factors determining grain size of magnesium alloys; obtaining a fine grain. G. Dan and A. Protopopescu (Studii Cerc. Metal., Bucharest, 1956, 1, 41—56).—Tests were made of an alloy of composition Mg–10% Al–1·5% Zn–0·5% Mn to determine the influence of chemical composition, melting rate, and introduction of substances which release C, on grain size. Zn and Mn had little influence on grain size but Al had a marked effect in reducing it. Overheating the melt, between the limits 750—1050°, produced a grain which became finer as the temp. increased. Longer periods of heating at different temp. partially offset the effect of the higher temp. The optimum condition for producing fine grain (~0·1 mm diam.) corresponded to an overheating of the melt at 950° during [illegible] 15 min. By "inoculating" the melt with methane or [illegible] lower similar results were obtained at lower temp. (750—800°) [illegible] (From French summary.) [illegible]

4

MT

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"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9

PANU, I. Huber; PANDELESCU, C.; PROTOPOPESCU, A.

Contributions to the study of very fine ore flotation with air freed from solution. Studii cerc metalurgie 9 no.2: 309-334 '64.

1. Corresponding Member of the Rumanian Academy (for Panu).

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9

VASILIU, Gabriel; PROTOPOPESCU, Cella

Methaemoglobinaemia of alimentary origin. Rumanian med. rev. no.2:45-48 '62.

(METHEMOGLOBINEMIA)

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9

PROTOPOPESCU, Ion, corespondent

A rich educative activity. Constr Buc 14 no. 675: 4
15 December 1962.

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9

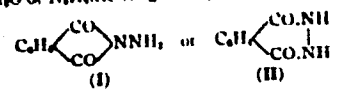
1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

Ca

10

New synthesis of monoacetylated derivatives of *N*-aminophthalimide. M. A. Mihăilescu and L. Protopopescu. *Soc. Chim. România Sect. Soc. române Științe, Bul. Chim. pură apl.* [2], **3A**, 16-23(1941-1942); *Chem. Zentr.* **1943**, II, 1270.—The reaction of $C_6H_4(CO)_2O$ with $N_2H_4.H_2O$ or $N_2H_4.AcOH$ gives a product with the compn



(I) (II)

The structure I is preferred because the compd. reacts with aldehydes, thus proving the presence of a NH_2 group. It is hydrolyzed to an amic acid and is sol. in alkalies with the formation of a mono-metallic salt. The final proof for the correctness of structure I is the synthesis of *N-acetylaminophthalimide* (II) from $C_6H_4(CO)_2NK$ and AcNHBr. I and Ac_2O on being heated give the *N-di-Ac deriv.* (II), m. 132°; crystn. of III from EtOH or H_2O gives II, m. 170°. Soln. in boiling KOH and acidification give I.

C. J. West

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9

PROCESSES AND PROPERTIES INDEX

Cm

12

Study of teas. C. Protopopescu. *Bul. soc. chim. Romania* **19A**, 133-7(1937). The value of a tea depends on the aroma of its infusion conditioned by the content of theine and buds. The content of H_2O, theine, cellulose and tannin varies with the age of the leaves, the development of the plant and the methods employed for the prepn of the leaves. These vary even for the same species of tea. Even during the different harvests in one year, there are great differences in the quality of the products. The buds and the first leaves give the best tea. Proper rolling, fermentation and roasting produce important modifications in compn. and enhance the value.

Benjamin Prescott

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9

C.A.

The constitution of semicarbazides of dibasic acids. I. Protopopescu and P. Popovici-Stancovici. *Acad. Rep. Populare Romîne, Bul. Stiinf.* **A**, 1, 885-95(1949) (French summary). $-H_2NCONHNH_2.HCl$ (I) condenses with anhydrides of dibasic acids to form 2 types of compds. depending upon the nature of the acid: (a) $(-CO)_2NCONHNH_2$, and (b) $(-CO)_2NNHCONH_2$; (a) do not decomp. when treated with H_2SO_4 or KOH. Phthaloylsemicarbazide (II) prepd. by a modified Banerjee method (C.A. 20, 3000) (in AcOH in the presence of NaOAc), m. 249-50°, and had a structure of type (a); with anisaldehyde was obtained o-$C_6H_4(CO)_2NCONHN:CHC_6H_4OMe$, m. 188°. With 3-nitrophthalic anhydride I yielded a compd. (IV), never prepd. before, m. 250°; when it was heated with anisaldehyde the NO_2 group was eliminated and the condensation product was identical with III. II (2 g.) heated 15 min. on an oil bath with 2 g. BzH formed a compd. $C_{14}H_{10}O_3N_2$, m. 171°.

G. A.

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9

a-3

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9

CRACIUN, E., prof.; PROTOPOPESCU, Iosefina, assist. prof.; ZAHARIA, Maria; GEORGESCU, I.; LUCA, Cecilia

The process of cancerous invasion as studied in tissue cultures of human cancer of the cervix and corpus uteri. Rumanian M Rev. no.2:3-8 Ap-Je '60.

(CERVIX NEOPLASMS pathology) (UTERUS NEOPLASMS pathology)

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9

PROTOPOPESCU, Iosefina, assist.prof.; BIRLOIU, Rodica; ZAHARIA, M.

Considerations on intramural pregnancy. Rumanian M Rev. no.2:80-83 Ap-Je '60.

(PREGNANCY, ECTOPIC)

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9"

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1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

8

Observations on the iodometric titration of thiourea. Lucrèce Protopopescu and Domnica Nedioglu. *Compt. rend. acad. sci. Roumaine* 7, 81-5(1943-45); *Chimie & industrie* 57, 454(1947).—The greatest difficulty encountered in the application of this method is due to the fact that the reaction leads to an equil. which vitiates the results if titration is carried out in a soln. that is too concd. with respect to thiourea. Fairly accurate results are obtained in the iodometric titration of thiourea provided the detn. is carried out at a low thiourea concn. (not over 0.002 *M*) in the absence of excess KI and other alkali halides. Use of an alc. instead of an aq. standard I soln. offers no advantage, as the same order of diln. is required for accurate results in both cases. The same observations are true for the iodometric titration of other org. compds. having a thiol group, as well as for thiourea. A. P.-C.

ASM SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9

PROTOPOPESCU L.

The constitution of semicarbazides of dibasic acids. L. Protopopescu and P. Popovici-Stancovici. Acad. Rep. Populare Române, Bul. Si___. A. 1, 885-95 (1949) (French summary).--$H_3NCONHNH_2.HCl$ (I) co_lenses with anhydrides of dibasic acids to form 2 types of compds. depending upon the nature of the acid: (a) $(--CO)_2NCONHNH_2$, and (b) $(--CO)_2NNHCONH_2$; (a) do not decomp. when treated with H_2SO_4 or KOH. Phthaloylsemicarbazide (II) prepd. by a modified Banerjee method (C.A. 29, 3999[7]) (in AcOH in the presence of NaOAc), m. 249-50°, and had a structure of type (a); with anisaldehyde was obtained o-$C_6H_4(CO)_2NCONHN:CHC_6H_4OMe$, m. 138°. With 3-nitrophthalic anhydride I yielded a compd. (IV), never prepd. before, m. 250°; when it was heated with anisaldehyde the NO_2 group was eliminated and the condensation product was identical with III. II (2 g.) heated 15 min. on an oil bath with 2 g. BzH formed a compd. $C_{16}H_{11}O_3N_3$, m. 171°.

G. A.

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9

PROTOPOPESCU, M.

Report on a scientific trip to the USSR, p. 539.

Academia Republicii Populare Romine. Centrul de Cercetari Metalurgice.
STUDII SI CERCETARI DE METALURGIE. Burcuresti, Rumania. Vol. 3, no. 4, 1958.

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

Uncl.

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9

PROTOPOPESCU, M.; ZAMIRCA, St.; PETRESCU, N.

Determination of the frigoelement characteristics in semiconductor alloys with tellurium base. Studii cerc metalurgie 8 no.3: 255-264 '63.

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9

RUMANIA

PROTOPOPESCU, M.; ZAMIRCA, St.; PETRESCU, N.

Bucharest, Studii si Cercetari de Metalurgie, No 3, 1963, pp 255-264

"Determination of the Characteristics of Cooling Elements in Semi-Conducting Alloys with a Tellurium Base."

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9

PROTOPOPESKU, M. [Protopopescu, M.]; ZEMYRKE, Sh. [Zamirca, S.]; PETRESKU, N. [Petrescu, N.]

Determining the cooling characteristics of the elements from semiconductor alloys based on tellurium. Rev Roum metalurg 8 no. 2:175-182 '63.

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9

PROTOPOPESCU, Marius

"Direct observations of imperfections in crystals" by J.B.Hewkirk, J.H. Wernick, Reviewed by Marius Protopopescu. Studii cerc metalurgie 8 no.1:99-100 '63.

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9

PROTOPOPESCU, M.

Distr: 4E2c(m)

4
1-RDW
1-MJC(JD)
1

Purification of tellurium. N. Petrescu, M. Protopopescu, and D. Drimer. *Acad. rep. populare Romîne, Studii cercetări met.* 5, 51-62(1960).—Tech. pure (97.8%) Te, contg. Pb 1, Se 1, Bi 0.1, Cu 0.01, Ag 0.05, Fe 0.001, Si 0.005, Al 0.005, Mg 0.0005, Na 0.01, Au 0.0001%, has been further purified by distn. *in vacuo*, owing to the large differences in vapor pressure between Te and the majority of the impurities (Au, Fe, Si, Cu, Ag, Bi, Pb, Sb) at relatively low temps. The distns. were performed in a quartz retort and in a Cr-Mo steel retort, collecting the deposited Te on a cool tube. The temps. were 450-600° and the residual pressures 0.15-0.002 mm. Hg. In all cases the impurities were eliminated up to the limit determinable by spectrographical analysis. Distn. rates were 4 g./sq. cm. hr. at 0.002 mm. Hg and 450°, 15 at 500°, 15 at 550°, and 40 at 600°. Best results were obtained at 600° and 0.01-0.001 mm. Hg when the impurities were below a few p.p.m. Distn. is stopped after 80-90% of the Te is distd., since complete distn. is accompanied by an increase in impurity content of the condensate. A bar of Te contg. Pb 0.05, Cu 0.001, Bi 0.01, Ag 0.0005, Sn 0.0001, Cd 0.0005, Fe 0.0005, Si 0.001, Al 0.001, Mg 0.0001, Na 0.005% was purified by means of zone melting in a quartz tube. Detn. of elec. cond. curves as function of temp. indicated a less efficient purification, but tests of zone purification of vacuum-distd. Te gave very good results, the refined Te corresponding to the exigencies of semiconductors (less than 1.6×10^{16} impurity atoms/g.-atom). M. Ben Flieser

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9

PROTOPOPESCU, M.; PETRESCU, N.; DRIMER, D.; MOROIANU, A.; FRANKEL, D. conf.ing

Semiconducting compound InSb for magnetometric transducers. Studii cerc metalurgie 6 no.4:375-393 '61.

1. Institutul politehnic cin Timisoara, catedra de electrotehnica si Uzinele "Electronica" Bucuresti (for Frankel).

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9

L 18780-63 EWP(q)/EWT(m)/BDS AFFTC/ASD JD
ACCESSION NR: AT3002462 R/2501/63/008/001/0031/0042 58

AUTHOR: Protopopescu, M.; Zemirche, S.; Petrescu, N.; Trite, V. (Rumanian orth.)

TITLE: Electrical resistivity of indium as a function of the degree of purity (Translation from Rumanian into Russian; original published in the journal "Studii si cercetari de metalurgie, Acad. R.P.R.", 1962, 7, 3.)

SOURCE: Academia Republicii Populare Romine. Revue Roumaine de metallurgie. v. 8, no. 1, 1963, 31-42

TOPIC TAGS: Semiconductor material, electrical resistivity, electrical conductivity, indium, cementation, electrolysis, vacuum distillation, transport phenomena, zone refining, impurity.

ABSTRACT: The relationship between the resistivity of indium and the concentration of impurities was investigated in order to establish a quick and easy method of purity assay for samples too pure for chemical or spectral analysis. Indium of extreme purity is needed for the semiconductor industry. Indium of 99.998% purity was obtained by applying the methods of cementation, electrolysis of hydrochloric acid solutions, vacuum distillation and repeated zone refining with

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L 18780-63
ACCESSION NR: AT3002462

forced cooling. A phenomenological relationship was determined for the ratio of the resistivity at room temperature to the resistivity at liquid nitrogen temperature and the concentration of impurities (by weight) C:

$$\rho_{273^\circ K} / \rho_{80^\circ K} = 1,48 \cdot \log \frac{1}{C} + 2,15.$$

If this equation is presented graphically, then the concentration of impurities is easily determined by making resistance measurements at room and liquid nitrogen temperatures. Orig. art. has 3 graphs, 1 diagram and 5 tables.

ASSOCIATION: none

SUBMITTED: 000 DATE ACQ: 17Jun63 ENCL: 00

SUB CODE: EL, PH NO REF SOV: 000 OTHER: 000

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"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9

S/275/63/000/002/012/032
D405/D301

AUTHORS: Petrescu, N., Protopopescu, M. and Someşan, M.

TITLE: Preparation of InSb single crystals and study of their dislocation-distribution

PERIODICAL: Referativnyy zhurnal, Elektronika i eye primeneniye, no. 2, 1963, 12, abstract 2B76 (Studii şi cercetări metalurgie Acad. RPR., v. 7, no. 2, 1962, 153-159 (Rum.: summaries in Rus. and Fr.))

TEXT: The results are given of experiments on the growth of InSb single crystals, and the experimental apparatus and procedure are described. The dislocation distribution in the grown single crystals was studied, as well as the possible formation of doublets and the repartition of dislocations between the parent crystal and the doublet. The observed increase in dislocation density in the doublet as compared to the parent crystal is explained by the formation of intrinsic dislocation sources in the doublet. (From the authors' summary).

[Abstracter's note: Complete translation]

Card 1/1

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9

PROTOPOPESCU, M.; ZAMIRCA, St.; PETRESCU, N.; TRITA, V.

Specific electric resistance of indium depending on the degree of purity. Studii cerc metalurgic 7 no.3:305-317 '62.

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9

S/058/62/000/012/047/048
A062/A101

26.2532

AUTHORS: Protopopescu, Marius, Petrescu, Nicolae

TITLE: Semiconductor alloys on the base of tellurium for thermoelectric refrigerators

PERIODICAL: Referativnyy zhurnal, Fizika, no. 12, 1962, 18, abstract 12-4-36n ("Studii şi cercetări metalurgie. Acad. RPR", 1962, v. 7, no. 1, 33 - 49, Rumanian; summaries in Russian, French)

TEXT: Binary compounds and ternary alloys of tellurium with bismuth, selenium and antimony were investigated. The initial materials were submitted to purification: the tellurium by zone melting, the others by chemical and electrochemical methods. Tables and curves are given which characterize the tellurium purification process (initial admixture content, rate of volatilization, fusion conditions, admixture distribution in the final ingot, etc.). Phase diagrams of various alloys and thermoelectric characteristics are analyzed. Microphotographs of specimens are given. As a result of the investigation, optimum conditions for preparation of alloys are determined. There are 31 references.
[Abstracter's note: Complete translation] N. S.

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"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9

PROTOPOPESCU, M.

Distr: 4E2c

Kinetics of precoagulation in an alloy of Dural type. Marius Protopopescu. *Rev. met. Acad. rep. populaire Roumaine* 3, 81-97(1958)(in Russian).—An Al alloy contg. Cu 3.26, Mg 1.64, Mn 0.9, Si 0.55, Fe 0.5, and Zn 0.1%, for which the max. hardening effect will occur only in the presence of the *S* phase of Al_2CuMg, was investigated. The alloy was treated at 400° for 6 hrs. and cooled slowly. Test specimens were then pickled in a salt bath at 500 ± 5° for 2 hrs., quenched in ice H_2O, artificially aged at different temps., and immediately cooled in ice H_2O. Hardness detns. show that the alloy structurally hardens even at room temp. in comparatively short times. At higher temps. the process is more pronounced. Its hardness increases progressively and asymptotically approaches a predetd. value, while its hardenability is approx. 35%. At 100° the curve hardness-time has 2 max. sepd. by the relative softening of the alloy. Also elec. resistance measurements were made on specimens of the alloy treated at 500° for 2 hrs., hardened in ice H_2O, and immediately dipped into an oil bath. The sp. elec. resistance increases as the aging time increases. This fact proves that internal transformations, which disperse the electron waves of the elec. cond., take place. A formula is rederived for the relation between the sp. elec. cond. and duration of aging. It was established from calcns. with this formula that the investigated alloy has a needle-shaped Guinier-Preston zone (cf. G., *CA* 50, 9970h).

Mordecai Medwed

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"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9

PROTOPOPESCU, M.

21

✓ Semiconductor properties of cadmium-antimony alloys. Marius Protopopescu, Dolpini Drimer, and Emeric Fokt. *Acad. rep. populare Romîne, Studii cercetări med.* 4, 311-38 (1959); cf. Yurkov, *C.A.* 51, 11051a.—A literature survey of the phase diagram Cd-Sb revealed 2 definite compounds CdSb and Cd_3Sb_2. Because of the difference in m.p. of Cd and Sb, their great reactivity, and the volatility of Cd, in order to form pure and stable compounds, the melting and prepn. of the alloy was performed in evacuated (10^{-3} mm.) vials of Jena glass and quartz, by using Cd and Sb of high purity (Cd 99.88% and Sb 99.86%) and for the last series of alloys, zone-refined Sb (99.9998%). Forty alloys of various compns. were prepd., in rectangular bars (3 × 6 × 30 mm.) with all faces polished by metallographic techniques. Microstructure, microhardness, elec. resistance, and thermo-e.m.f. were detd. The structural constituents were analyzed by selective attack reagents; the semiconductor properties of the alloys were evaluated by detg. the elec. resistance as function of compn., the elec. cond. as function of temp., and the mean coeff. of the thermo-e.m.f. Better semiconductor properties were found for CdSb, the elec. resistance of which is 2500 times (22,210 ohm-cm.), and the mean coeff. of the thermo-e.m.f. 200 times, that of pure Cd. In alloys contg. excess of metal these values are considerably reduced, but not in accord with the distribution of the constituents in the alloy. No semiconductor properties were found for Cd_3Sb_2. The theoretically expected correlation between the coeff. of thermo-e.m.f. α and the elec. cond. σ, of differently proportioned alloys of Cd and Sb, $\alpha = A - B \log \sigma$, was verified exptl. for the region Cd + CdSb. The exptl. results were interpreted in light of the electronic theory of metals and semiconductors, and hypotheses were suggested for explanation of $A^{II}B^{V}$ phases, the structural, phys., and semiconductor properties of ZnSb and CdSb being compared.

M. Ben Eliezer

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APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9

PROTOPOPESCU, M. RUMANIA

No degree given

No affiliation given

Bucharest, Studii si Cercetari de Metalurgie, No 3, 1962, pp 301-317.

"Electric Resistivity of Indium According to the Degree of Purity."

Co-authors:

ZAMIRCA, St.

PETRESCU, N.

TRITA, V.

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9

S/058/62/000/010/093/093
A061/A101

AUTHORS: Protopopescu, M., Petrescu, N., Drimer, D., Moroianu, A.

TITLE: InSb semiconductor compounds for magnetometer pickups

PERIODICAL: Referativnyy zhurnal, Fizika, no. 10, 1962, 6 - 7, abstract 10-4-12ch ("Studii şi cercetări metalurgie Acad. RPR", 1961, v. 6, no. 4, 375 - 393, Rumanian; summaries in Russian and French)

TEXT: The production of InSb semiconductor compounds possessing high electron mobility to serve for the manufacture of magnetometer pickups with domestic raw materials of commercial purity was considered. The initial metals were purified by the evaporation of impurities or by vacuum distillation and the subsequent refining by zone melting. From the indium and antimony obtained in this way, InSb was synthesized in vacuum or argon-filled ampoules. Three zone melting versions were applied to the InSb compound by using original equipment. The middle part of the ingots was obtained with a purity degree of $1.8...3.7 \cdot 10^{16}$ ionized atoms per cm^3 after 15 - 23 zone passages. A study of microstructure

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and microhardness exposed the effect of zone melting on the homogeneity of the material. The values obtained for electric resistivity and the Hall constant fully fit the conditions of magnetometer pickup manufacture.

From the authors' summary

[Abstracter's note: Complete translation]

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"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9

43018

S/194/62/000/010/040/084
A061/A126

24.7000

AUTHORS: Protopopescu, M., Petrescu, N., Drimer, D., Moroianu, A.

TITLE: InSb semiconductor compounds for magnetometer pickups

PERIODICAL: Referativnyy zhurnal, Avtomatika i radioelektronika, no. 10, 1962, 6 - 7, abstract 10-4-12ch (Studii şi cercetări metalurgie. Acad. RPR, 1961, v. 6, no. 4, 375 - 393; Rumanian; summaries in Russian and French)

TEXT: The production of InSb semiconductor compounds, possessing a high electron mobility, for use in the fabrication of magnetometer pickups with domestic raw materials of commercial purity is considered. The initial metals were purified by evaporation of the impurities or by vacuum distillation and the subsequent refining by zone melting. From the indium and antimony thus obtained, InSb was synthesized in vacuum or argon-filled ampoules. Three zone-melting versions were applied to the InSb compound by using original equipment. The middle part of the ingots was obtained with a purity degree of $1.8 \ldots 3.7 \cdot 10^{16}$ ionized atoms per cm^3 after 15 - 23 zone passages. A study of microstructure and

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"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9

S/194/62/000/010/040/084
A061/A126

InSb semiconductor compounds for magnetometer pickups

microhardness revealed the effect of zone melting on the homogeneity of the material. The values obtained for the electric resistivity and the Hall constant fully fit the conditions of magnetometer pickup fabrication.

From the authors' summary

[Abstracter's note: Complete translation]

Card 2/2

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9

PROTOPOPESCU, Marius; PETRESCU, Nicolae

Semiconducting alloys based on tellurium for the thermoelectric refrigerators. Studii cerc metalurgie 7 no.1:33-49 '62.

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9

PROTOPOPESCU, Marius

Distr: 4E2c 18 27

A study of the hardening of technical aluminum by cold-drawing. Marius Protopopescu (Bucharest Polytech. Inst.). *Rev. Met., Acad. rep. populaire Roumaine* 2, 91-106(1957)(in Russian).—Changes in the elec. resistance and mech. properties of 3 Al alloys were studied as a function of cold-drawing into wire. The alloys were: 0.04 Si, 0.05 Fe, 0.012 Cu, 0.005 Zn, traces of Mn, 99.803% Al (by difference) (I); 0.09 Si, 0.11 Fe, 0.012 Cu, 0.006 Mg, 0.025 Zn, traces of Mn, 99.748% Al (by difference) (II); 0.18 Si, 0.17 Fe, 0.042 Cu, 0.018 Mg, 0.28 Zn, 0.012 Mn, 99.550% Al (by difference) (III). The alloys were rolled at 450° to 10-12.5 mm. diam. rod, cold-drawn to the desired extent, and cut to 800-1000 mm. lengths. The specific elec. resistance, ρ, was measured to ±0.02% in a thermostated room at 20° by using 3 amp. and 700 mm. between contacts. ρ increased linearly up to a crit. percent reduction which was: I 78.4; II 72.62; and III 69.53%. ρ then decreased exponentially. The max. ρ for I was approx. 0.0285 ohm sq. mm./m. and the min. ρ for I was 0.02657 ohm sq. mm./m. as 100% reduction was approached. The mech. properties of the wire showed changes in slope at the same points where ρ was a max. The decrease in ρ was explained by recrystn. and the pptn. of Fe and Si from solid soln. R. D. Misch

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"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9

PROTOPOPESCU, M.

Semiconductor properties of antimony-zinc alloys. M. Protopopescu, D. Drimer, E. Fokt, and T. Dulămită. *Acad. rep. populare Romîne, Studii cercetări met.* 4, 33-51 (1959).—The variations of the elec. and thermoelec. properties of Sb-Zn alloys are investigated as functions of their compn. and structure. The alloys are produced *in vacuo* or under Ar. Zn, purified to 99.92, and Sb, purified to 99.80 and 99.9998%, are used. The elec. resistance, as a function of the compn. and the structure of the alloys, shows a pronounced max. in the case of SbZn at $\rho = 14,320$ $\mu\Omega$-cm. With 30-45% Zn the semiconductor character of the alloys is especially notable. In a no. of these alloys the activation energy for the thermal transitions of the charge carriers Δ_f is calcd. to be 0.40 e.v. The relation between the thermo-e.m.f. (α) and the elec. cond. (σ) is $\alpha = 456.5 - 81.4 \log \sigma$ in the entire range of the alloy system Sb-Zn.

Felicitas P. Goodman

Distr: 4E3c/4E2c

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"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9

PROTOPOPESCU, MARIUS.

Distr: 4F1

Hardening of technical aluminum by alloying it with small percentages of other elements. Marius Protopopescu (Polytechn. Inst., Bucharest). *Acad. rep. populare Romîne, Studii cercetări met.* 2, 425-46(1957).—The effect of small percentages of Zn, Mg, Cu, and Mn upon the elec. resistance and the Brinell hardness of tech. Al of 99.75% purity was studied. For small addns. the resistance increased almost linearly up to 1 atom %, even if, as in the case of Cu, the alloying element shows by itself a much smaller resistance. For higher percentages of the alloying element the resistance curve showed a more or less parabolic shape. Mn had the greatest effect here. The changes in the resistance followed Kurnakov's Law (*Raboty v Oblasti Tsvetnoĭ Met.*, Moscow; *Gosudarst. Nauch. Tekh. Izdatel. Lit. po Chernoĭ i Tsvetnoĭ Met.* 1954) and Norbury's rule. The hardening of an Al-Mg-Si alloy of the Aldrey type was studied by following the changes of the elec. and mech. characteristics as a function of the degree of reduction of the cross section upon drawing the wire through a circular die right after tempering, of the temp. of aging of tempered, undeformed samples, of the aging temp. of tempered samples deformed to various reductions of the cross section, and of the duration of the aging temp. treatment. It was not possible to find a treatment or combination of treatments which had desirable elec. and mech. properties simultaneously. This was true because Mg_2Si pptd. almost quantitatively from the solid soln., to give an elec. cond. close to that of unalloyed Al, and to obtain the right mech. properties it was necessary to have an almost colloidal dispersion of the pptd. particles, which could not be achieved.

Werner Jacobson

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9

Protopopescu, M.

Hardening industrial aluminum by addition of small quantities of alloying elements. In Russian. p. 33.

REVUE DE METALLURGIE. JOURNAL OF METALURGY. (Academia Republicii Populare Romine) Bucuresti, Rumania Vol. 3, no. 3, 1958

Monthly List of East European Accessions (EEAI) LC, Vol. 8, no. 9, Sept 1959

Uncl.

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9

PROTOPOPESCU, M., and others.

Semiconducting characteristics of antimony-zinc alloys. p. 33.

STUDII SI CERCETARI DE METALURGIE. Bucuresti, Rumania. Vol. 4, no. 1, 1959.

Monthly List of East European Accessions. (EEAI), LC. Vol. 8, no. 9, Sept. 1959.
Uncl.

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9

PROTOPOPESCU, M. ; DRIMER, D. ; FOKT, E.

Semiconductive properties of cadmium-antimony alloys. p. 311.

Academia Republicii Populare Romine. STUDII SI CERCETARI DE METALURGIE. Bucuresti, Rumania. Vol. 4, No. 3, 1959

Monthly List of East European Accessions (EEAL) LC Vol. 9, no. 2, January 1960

Uncl.

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9

E

RUMANIA/Solid State Physics - General Problems.

Abs Jour : Ref Zhur Fizika, No 10, 1959, 22545

Author : Protopopescu, M.

Inst :

Title : Metals and Semiconductors

Orig Pub : An. Rom.-Sov. Ser. metalurgie, 1958, 12, No 4, 17-29

Abstract : No abstract.

Card 1/1

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9

The hardening of industrial aluminum by addition of small amounts of other elements. M. Protopopescu (Bucharest Polytech. Inst.). *Rev. met., Acad. Rep. populaire Roumaine* 3, No. 3, 33-51(1958)(in Russian).—Various Al alloys contg. Zn, Cu, Mg, and Mn are prepd. Measurements of sp. cond. and hardness are taken. The sp. resistance increases linearly for small addns., but the graph assumes a parabolic curve for larger addns. Mn produces the greatest increase in sp. resistance. Zn, having the greatest soly. in the solid state in Al, produces the least increase in hardness. Addns. of Cu produce a large increase in sp. resistance and hardness. Mg has an effect midway between Zn and Cu. Mg and Si, in Al alloys, form a stable phase Mg_2Si, which hardens the alloy. The ternary diagram Al-Si-Mg and a graph showing the changes of elec. cond. in relation to percent of Si and Mg are given. A slight excess of Si must be added over the theoretical amt. necessary to form Mg_2Si because Fe also forms a stable compd. with Si. An excess of Si does not affect the sp. cond. and actually increases the mech. hardness. A series of expts. on an Aldrey-type alloy (contg. Al 98.7, Si 0.66, Mg 0.48, and Fe 0.12% by wt.) is carried out to study the effect of hardening on the changes of elec. and mech. characteristics. These changes are studied in relation to degree of deformation, aging temp., degree of compression and aging temp., and duration of aging. Max. pptn. of Mg_2Si from solid soln. produces an elec. cond. near to that of industrial Al. To obtain good mech. properties, an almost colloidal dispersion of pptg. particles is necessary. John H. Fishwick

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9

PROTOPOPESCU, M.

"Some contributions to the study of the hardening of commercial aluminum drawn in the cold state."

p. 9 (Studii Si Cercetari De Metalurgie) Vol. 2, no. 1/2, 1957
Bucharest, Rumania

SO: Monthly Index of East European Accessions (EEAI) LC. Vol. 7, no. 4, April 1958

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9

PROTOPOPESCU, M.

"Kinetics of the pre-precipitation phenomenon in a Duralumin alloy."

p. 221 (Studii Si Cercetari De Metalurgie) Vol. 2, no. 3, 1957
Bucharest, Rumania

SO: Monthly Index of East European Accessions (EEAI) LC. Vol. 7, no. 4, April 1958

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9

E-6

RUMANIA/Solid State Physics - Phase Transitions in Solids

Abs Jour : Ref Zhur - Fizika, No 9, 1958, No 20390

Author : Protopopescu M.
Inst : Not Given
Title : Concerning the Problem of the Kinetics of the Phenomenon of Pre-percipitation in One Alloy of the Duralumin Type.

Orig Pub : Studii si cercetari metalurgie Acad. RPR, 1957, 2, No 3, 221-239

Abstract : In order to interpret the kinetics of the structural strengthening an investigation is made of the stage of the so-called "pre-percipitation," in which particles of the percipitating phase are still invisible under the microscope, in spite of the appearance of strengthening effects. The author has determined the variation in the specific electric resistivity as a function of the duration of the isothermal soaking. It follows from these data, that the electric resistivity varys according to the following law

$$(\rho_\tau - \rho_c)/\rho_{max} - \rho_0 = 1 - \exp(-k\tau^n)$$

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E-6

RUMANIA/Solid State Physics - Phase Transitions in Solids

Abs Jour : Ref Zhur - Fizika, No 9, 1958, No 20390

where ρ_0 is the specific resistivity of the alloy directly after hardening, ρ_{max} is the specific resistivity after completion of the transformation, ρ_t is the specific resistivity of the alloy after the time interval of isothermal aging, t the duration of seeking, and n=1.3 to 1.46 and is independent of the temperature.

Card : 2/2

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"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9

S/194/62/000/012/054/101
D271/D308

16.1290

AUTHORS: Protopopescu, Marius and Petrescu, Nicolae

TITLE: Semiconductor tellurium alloys for thermoelectric refrigerators

PERIODICAL: Referativnyy zhurnal, Avtomatika i radioelektronika, no. 12, 1962, 18, abstract 12-4-36 n (Studii si cercetari metalurgie Acad. RPR, v. 7, no. 1, 1962, 33-49 (Rum.; summaries in Rus. and Fr.))

TEXT: Binary and ternary alloys of tellurium with bismuth, selenium and antimony were investigated. Constituents were purified: tellurium by zone melting, remainder by chemical and electrochemical methods. Tables and graphs are given characterizing the refining process of tellurium (initial impurity content, rate of volatilization, conditions of melting, distribution of impurities in the final ingot, etc.). Phase diagrams of various alloys and their thermoelectric characteristics are analyzed. Micrographs of samples are given. The investigation made it possible to es-

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Semiconductor tellurium alloys ... S/194/62/000/012/054/101
D271/D308

tablish optimal conditions of alloy processing. 31 references.
/Abstracter's note: Complete translation./

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"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9

PROTOPOPESCU, MARIUS

(22) (257)

Bucharest, Studii si Cercetari de Metalurgie, Vol VII, No 1, 1962

1. "The 'Suballothropic' Transformations of Iron Tied to Some of the Properties of Steels," Ovidiu BOLGIU and Maria BOLGIU; pp 7-32.

2. "Semiconducting Alloys with a Tellurium Base for Thermo-electric Refrigerators," Marius PROTOPOPESCU and Nicolae PETRESCU; pp 33-49.

3. "Dislocations and Masle in Silicon Monocrystals Obtained by the Method of Zonal Melting," V. RITTENBERG, B. DIDIV and P. ROMAN; pp 51-61.

4. "Study on the Distribution of Impurities in an Ingot of Semiconducting Material Starting from an Enriched Pastille Through Repeated Zonal Melting, with Applications to Silicon Enrichment," B. DIDIV, V. RITTENBERG and P. ROMAN; pp 63-72.

5. "Considerations on the Content of Gases and Non-metallic Inclusions in Indigenous Raw Pig Iron," L. SOFRONI, C. COSNEANU, E. NICOLOIU and S. FRUCHTER; pp 73-87.

6. "Experimental Studies on the Influence of the Deformation Intensity on the Mechanical Properties of Certain Types of Thin Laminated Sheets at High Temperatures," R. FISCHGOLD and I. DRAGAN; pp89-101.

7. "Contributions to the Elaboration of Magnetic Powders Usable in Agricultural Technology," Alexandru DOMSA, Liviu BOTHA and Attila PALFALVI; pp 103-113.

8. "Simple Method to Avoid the Deposit of "Mustaches" during the Growth of Silicon Monocrystals in Vacuum," V. RITTENBERG, P. ROMAN and B. DIDIV; pp 115-116.

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"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9

ZAMIRCA, St.; PETRESCU, N.; SOMESAN, M.; PROTOPOPESCU, M.

Some aspects of obtaining the InAs semiconductor compound.
Studii cerc metalurgie 9 no.2:383-388 '64.

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9

PROTOPOPESCU, V.

RUMANIA/Cultivated Plants - Fruits and Berries. M-5

Abs Jour : Ref Zhur - Biol., No 3, 1958, 11022

Author : Protopopescu, V., Mihalache, L.

Inst : Academy of the Rumanian People's Republic.

Title : Planting Slopes in Belts as a Method of Preparing Them for Setting Out New Vineyards.

Orig Pub : Comun. Acad. RPR, 1956, 6, No 2, 327-332

Abstract : Experiments of the viticulture station in Valya Kelugeryaske (Ploesti, Rumania) have determined that when moderate slopes (25° - 30°) are being prepared for planting new vineyards, the best way to inhibit soil erosion is to alternate belts of vineyard plantings with belts of unplowed land.

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"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9

PROTOPOPESCU-PACHE, Em., prof. geolog.; CONSTANTINESCU, Gh.P., ing.; MEGULESCU, M., Ing.

Economical solution for the drinking water supply of the city of Hunedoara. Hidrotehnica 8 no.3:81-88 Mr '63.

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9

USSR/Aeronautics Feb 49
Airplanes, Attack
Airplanes, Fighter

"Our Attack Airplane, the Pride of Our Country," Engr-Col A. Protopopov, Docent, Cand Tech Sci, 8 pp

"Vest Vozdush Flota" No 2

The "Shturmovik" is a typical Soviet plane developed as an aerial fighter and for ground-support measures. Briefly traces development of ground-support attack plane. Discusses Il'yushin attack plane, typical Soviet "Shturmovik" designed to

FDB 40/49T12

USSR/Aeronautics (Contd) Feb 49

cut the "dead weight" of armor plating to a minimum by incorporating it as part of the plane's basic framework. Includes three photographs of the "Il-2."

PROTOPOPOV, A., ENGR-COL

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"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9

[illegible], A.
[illegible], [illegible], 1934, 3, 631-640

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9

PROTOPOPOV, A.,
G. KURDYUMOV, Zavodskaya Lab. 4, 341-2 (1935)

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9

PROTOPOPOV, A., inzhener

First results. Zhil.-kom.khoz. 12 no.11:20-21 N '62. (MIRA 15:11)

1. Uchenyy sekretar' zhilishchnoy sektsii Moskovskogo oblastnogo pravleniya nauchno-tekhnicheskogo obshchestva gorodskogo khozyaystva i avtomobil'nogo transporta.
(Moscow—Apartment houses—Maintenance and repair)

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9

KASSEL', V.N.; PROTOPOPOV, A.A.

Ways to increase the industrial capacity of the flax processing industry. Tekst. prom. 25 no.4:18-19 Ap '65. (MIRA 18:5)

1. Zamestitel' nachal'nika proizvodstvenno-tekhnicheskogo otdela upravleniya tekstil'noy promyshlennosti Soveta narodnogo khozyaystva BSSR (for Kassel'). 2. Starshiy inzhener proizvodstvenno tekhnicheskogo otdela upravleniya tekstil'noy promyshlennosti Soveta narodnogo khozyaystva BSSR (for Protopopov).

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ACCESSION NR: AR5008995 UR/0196/65/000/002/B007/B007

621.315.61.015.51

41
B

SOURCE: Ref. zh. Elektrotekhnika i energetika, Abs. 2B44

AUTHOR: Protopopov, A. A. 44,55

TITLE: Outfit for measuring impulse electric conductivity of liquid dielectrics 21,44,55

9M,44

CITED SOURCE: Sb. nauchn. tr. Dnepropetr. inzh.-stroit. in-t, vyp. 29, 1963, 13-18

44,55

TOPIC TAGS: liquid dielectric, liquid dielectric conductivity, conductivity measurement

TRANSLATION: Measuring pre-breakdown currents under impulse conditions is important for establishing the correlation between the pre-breakdown phenomena and breakdown proper in dielectrics. However, such measurements are usually difficult to make because of heavy charging and discharging currents in the specimen at the beginning and end of the impulse. Single impulses are best for measuring because they do not heat up the specimen and obviate the effects of

Card 1/2

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considerable space charges near the electrodes. A new capacitive symmetrical bridge, whose circuit is presented, was used for measuring the impulse conductivity of liquid dielectrics by means of rectangular impulses of 5—1000 microsec. The signal was observed on a long-afterglow oscilloscope. It was possible to see the time difference between the application of voltage impulse and the breakdown moment. The results are reported of check measurements of impulse conductivity current in n-hexane by means of 10-microsec impulses; the results are in good agreement with the data published elsewhere. Bibl. 7, figs. 4.

SUB CODE: EE ENCL: 00

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Card 2/2

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"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9

MITSKEVICH, P.K. [Mitskevych, P.K.]; MOROZOV, A.A. [Morozov, O.O.]

Role of polarization effects in measuring the pulse conductivity and the breakdown strength of n-hexane. Ukr. fiz. zhur. 10 no.3:342-343 Mr '65. (MIRA 18:6)

1. Dnepropetrovskiy inzhenerno-stroitel'nyy institut.

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9

PROTOPOPOV, A.A.

Heating VISKhOM dryers with exhaust steam from mobile steam engines. Obm. tekh. opyt. [MLP] no.4:4-6 '56. (MIRA 11:10)
(Drying apparatus--Textile fabrics) (Steam engines)

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9

PROTOPOPOV, A., starshiy inzhener

In a situation of great activity. Zhil.-kom.khoz. 11 no.5:24-25 My '61. (MIRA 14:7)

1. Moskovskoye oblastnoye upravleniye zhilishchnogo khozyaystva.
(Moscow—Municipal services—Technological innovations)

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9

24.7900

S/058/61/000/010/032/100
A001/A101

AUTHOR: Protopopov, A.A.

TITLE: Electronic paramagnetic resonance

PERIODICAL: Referativnyy zhurnal. Fizika, no. 10, 1961, 158, abstract 10V319 ("Sb. nauchn. tr. Kafedry fiz. Dnepropetr. inzh.-stroit. in-t", 1960, no. 7, 24 - 49)

TEXT: Review. Magnetic properties of atoms and molecules, and also Zeeman effect are briefly considered. Physical fundamentals of the method of electronic paramagnetic resonance and methods of its observation are described in detail. Factors are characterized which affect the shape of lines of electronic paramagnetic resonance. In conclusion fields of application of electronic paramagnetic resonance in physics, chemistry and engineering are enumerated. There are 20 references.

[Abstracter's note: Complete translation]

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APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9

MITSKEVICH, P.K.; PROTOPOPOV, A.A.

Electric conductivity of liquid dielectrics in strong electric fields. Elektrokhimiia 1 no.10:1187-1195 O '65.

1. Dnepropetrovskiy inzhenerno-stroitel'nyy institut. (MIRA 18:10)

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9

PROTOPOPOV, Aleksandr Borisovich

Konstruktsiya i Rabota Chastey Samoleta. [Construction and Working Parts of Aircraft] by A. B. Protopopov i V. I. Znulev. Moskva, Voyenizdat, 1958.

307, (2) p. Illus, diagrs. Bibliography: p. 309.

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9

PROTOPOPOV, Aleksandr Borisovich

Konstruktsiya i rabota chastey samoleta. [Construction and working parts of aircraft, by] A. B. Protopopov [1] V. I. Zhulev. Moskva, Voyenizdat, 1958.
307, [2] P. Illus., Diagrs.
Bibliography: P. [309]

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9

PROTOPOPOV, Aleksandr Borisovich,; ZHULEV, Vasiliy Ivanovich,; ZAKHAROV, D.M., inzh.-polkovnik, red.; ANIKINA, R.F., tekhn.red.

[Design and performance of airplane parts] Konstruktsiia i rabota chastei samoleta. Moskva, Voen. izd-vo M-va obor. SSSR, 1958. 307 p. (MIRA 11:12)

(Airplanes--Design and construction)

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9"

"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9

PHASE I BOOK EXPLOITATION 952

Protopopov, Aleksandr Borisovich and Zhulev, Vasiliy Ivanovich

Konstruktsiya i rabota chastey samoleta (Design and Loading of Airplane Components) Moscow, Voyen. izd-vo M-va obor, SSSR, 1958. 307 p. No. of copies printed not given.

Ed.: Zakharov, D.M., Engineer Lieutenant Colonel; Tech. Ed.: Anikina, R.F.

PURPOSE: This book is intended for the engineering and technical personnel of the Air Forces. It may also be useful to students of aeronautical engineering schools and to flying personnel of the Soviet Air Forces, and also to flying and technical personnel of DOSAAF and the Civil Air Fleet, to workers in the aeronautical industry and to others interested in aeronautical engineering.

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"APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9

Design and Loading (Cont.) 952

COVERAGE: The authors discuss in popular form the loads acting on an airplane in flight and the performance of its basic structural components, such as the wing, fuselage, empennage and landing gear. To make the contents of the book understandable to the largest possible number of readers, the basic concepts of structural mechanics are also briefly presented. The book is illustrated by a large number of figures which help the reader to achieve a better understanding of complex problems relating to loads on the airplane components and to performance under load. In addition, the illustrations enable the authors to describe the physical nature of the phenomena discussed without resorting to complicated mathematics. The authors state that the book also attempts to present the principles on which the design of the separate airplane components is based, and to give a qualitative picture of the performance of those components under load. The authors state further that, in order to avoid cluttering up the book with formulas and computations, the calculation of the airplane for strength has not been considered. There are 201 figures, including sketches of the structure of components of the MIG-17. No personalities are mentioned. There are 10 Soviet references.

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APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001343320015-9"