Investigation of the magnetic properties of S/808/61/011/000/005/006

Conclusions: (1) The Fe corner of the system Fe-Mn-Cr for C=0.1% contains a great number of nonmagnetic alloys which exhibit good machinability and which can be employed for the development of inexpensive Ni-free nonmagnetic steels. (2) The said nonmagnetic steels lie within the bounds of 15% each of Cr and Mn contents. The introduction of up to 0.4% N into a high-Cr steel does not exert any effect on its magnetic properties. It follows that the Ni-free austenitic stainless steels with 15% Cr, so widely advertised abroad, cannot possess an austenitic structure. (3) The results of the investigation confirm existing literature data on the structure of low-C Mn steels and show that there are broad possibilities for low-C Mn nonmagnetic steels and also nonmagnetic Mn steels containing small additions of Cr. There are 2 figures and 1 two-page table; no references.

Card 2/2

BEREZHIANI, V.M.; GRIKUROV, G.N.

Investigating the corrosion resistance of iron-manganese-chromium alloys. Trudy Inst.met. AN Gruz. SSR 12:72-92 '62. (MIRA 15:12)
(Iron-manganese-chromium alloys—Corrosion)

GLIDZIC, V.; DORDEVIC, R.; GRIL, D.; JOSIPOVIC, Z.

2 cases of injuries of the rectum caused by acts of sodomy. Acta chir. iugosl. 7(8) no.3:258-262 '60.

1. I. Hirurska klinika medicinskog fakulteta u Beogradu (Upravnik prof. dr B.Kosanovic) Hirursko odelenje Opste bolnice u Cacku (Sef dr D.Gril) i Institut za sudsku medicinu Medicinskog fakulteta u Beogradu (Upravnik prof. dr J.Bogicevic)
(RECTUM wds & inj)
(SEX DEVIATION)

GRIL, D.; OCOKOLJIC, Lj.

A case of intestinal hemorrhage due to jejunal hemangioma.
Acta chir. Iugosl. 10 no.2:167-170 '63.

1. Hirursko odeljenje Opste bolnice u Cacku (Sef dr D. Gril).
(JEJUNUM) (INTESTINAL NEOPLASMS)
(HEMANGIOMA) (SURGERY, OPERATIVE)
(HEMORRHAGE, GASTROINTESTINAL)

S

STOLYARCHUK, Vsevolod Filippovich; KOMAROV, M.S., prof., otv. red.; GRILENKO, L., red.

[Dynamics of vertical hoisting] Dinamika vertikal'nogo pod"ema. L'vov, Izd-vo L'vovskogo univ., 1965. 150 p. (MIRA 18:9)

AUTHOR: Grilikhes, I. (Leningrad) SOV-28-58-9-36/42

TITLE: Contour Etching (Konturnoye travleniye)

PERIODICAL: Nauka i zhizn', 1958, Nr 9, p 67 (USSR)

ABSTRACT: A method for contour etching has been developed. It is called chemical (or electrochemical, if electric current is used) milling. Parts of the metal to be etched are subjected to the corrosive action of acids.

1. Metals--Etching 2. Corrosive liquids--Applications

Card 1/1

GRILIKHES, K.S.

Indices for various approaches in the surgical treatment of tuberculosis of the thoracic segment of the spine. Ortop. travm. protez. 24 no.7:38-43 Jl'63 (MIRA 17:2)

1. Iz kostno-tuberkuleznogo sanatoriya "Ol'shany" (glavnyy vrach - K.S.Grilikhes, nauchnyy rukovoditel' - chlen-korrespondent AMN SSSR prof. N.P.Novachenko). Adres avtora: Ol'shany, Khar'kovskoy oblasti, Dergachevskogo rayona, sanatoriy "Ol'shany".

GRILIKHES, M.S.; SYSOYEVA, V.V.

Effect of a chlorine anion on the kinetics of a simultaneous discharge of iron and nickel. Zhur. prikl. khim. 38 no.4:823-828 Ap '65. (MIRA 18:6)

GRILIKHES, M.S.; KRASIKOV, B.S.

Zero potential of two-phase systems. Vest.LGU 20 no.22:131-137 '65. (MIRA 18:12)

GRILIKHES, P.Z., vrach

Case of paresis of accommodation with a background of virus influenza. Oft.zhur. 14 no.7:432-433 '59. (MIRA 13:4)

1. Iz glaznogo otdeleniya sedsanchasti Novo-Kramatorskogo mashinostroitel'nogo zavoda.
(EYE--DISEASES AND DEFECTS)

1. GRILIKHES, S.
2. USSR (600)
4. Locks (Hydraulic Engineering)
7. An original construction, Nauka i zhizn', 20, no. 3, 1953.

9. Monthly List of Russian Accessions, Library of Congress, April 1953, Uncl.

GRILIKHES, S. Ya.

Dissertation: "Electrochemical Polishing of Steel." Cand Tech Sci, Leningrad Technological Inst, Leningrad, 1953. (Referativnyy Zhurnal--Khimiya, Moscow, No 4, Feb 54)

SO: SUM 243, 19 Oct 54

GRILIKHES, S. YA.

USSR/ Engineering - Machining methods

Card 1/1 Pub. 77 - 10/20

Authors : Gusev, V. N., and Grilikhes, S. Ya., Cand. Tech. Sci.

Title : Electrical machining of metals

Periodical : Nauka i zhizn' 21/12, 25-26, Dec 1954

Abstract : Mechanical methods for machining are found to be inadequate for machining extremely hard alloys used in the making of special mechanisms. To surmount this obstacle Soviet engineers have developed electrical and electro-chemical methods. The authors give the electrical characteristics and explain the working of a process for removing metal from a piece with an electric spark. A description is also given of a chemical drilling device. These methods are designed to speed up production. Illustration; drawings.

Institution : ...

Submitted : ...

GRILIKHES, S. Ya.

62

Improvement of magnetic characteristics of transformer-type iron by means of electrochemical treatment. S. Ya. Grilikhes. *Zhur. Tekh. Fiz.* 24, 1786–7(1954).—Electrolysis of sheet Fe in an electrolyte (H_3PO_4 65, H_2SO_4 15, CrO_3 6, and H_2O 14%, by wt.) at 70° for 10 min. with an anodic c.d. of 4 amp./sq. cm. increased the magnetic permeability of Fe by 10–15% and decreased the hysteresis losses by 10%. During electrolysis a layer of Fe 70–80 μ thick was removed; however, an inert coating formed on the sheet during electrolysis prevented exposure of the crystal structure of the metal.

A. P. Kotloby

Regeneration of solutions used in electropolishing of steel. N. P. Fedot'ev, R. G. Kruglova, and S. Ya. Grilikhes. *Zhur. Prikhd. Khim.* 27, 157–65(1954).—It was shown experimentally that the loss of efficiency of solns. used in electropolishing of Fe was due to the accumulation of Cr_2O_3 at the cost of CrO_3 and that polishing ability was completely lost when Fe_2O_3 accumulated in excess of 7%. The effectiveness of the soln. was completely restored by the following steps in order: (a) reduction of CrO_3 to Cr_2O_3 at a Pb cathode at 20–25°, cathodic and anodic c.ds. being 0.5 and 2–5 amp./sq. dm., resp.; sp. gr. of the soln. should be 1.7, since higher sp. gr. lowered the rate of reduction and dilg. necessitated subsequent concg.; (b) reduction of Fe^{3+} to Fe^{2+} at a Pb cathode with simultaneous pptn. of $FeSO_4$, at 70–80°, cathodic and anodic c.ds. being 0.5–1 and 5–10 amp./sq. dm. resp. and sp. gr. 1.6–1.75 (under these conditions, evapn. compensated for the drop in sp. gr. due to pptn. of $FeSO_4$, and lower soln. d. increased soly.; higher c.d. increased viscosity, thus decreasing rate of pptn.; lower temp. (20–25°) necessitated periodic concn. to bring up the d.); (c) addn. of acids and oxidation of Cr_2O_3 to CrO_3 at an anode of Pb coated with a film of PbO_2 at 20–25°, at cathodic and anodic c.ds. 5–10 and 3–5 amp./sq. dm., resp.; H_2SO_4 should be not less than 6%. Oxidation took place very poorly on Pt coated with PbO_2 and not at all on Pt.

J. Bencowitz

GRILIKHES, S.Ya., kandidat tekhnicheskikh nauk.

Protective and decorative oxidation of aluminum articles. Leg.prom. 16 no.9:40-42 S '56. (MLRA 9:11)
(Protective coatings) (Aluminum--Finishing)

GRILIKHES, S. YA.

1:4E2c

Condition of the surface of steel during electrochemical polishing. [illegible] Grilikhes [illegible] following [illegible] changes of the [illegible] surface during [illegible] polishing. (a) The current [illegible] 43. study of electropolishing [illegible] is not an equivalent [illegible] anodic potential *E* [illegible] an electrolyte contg. H_3PO_4 [illegible] 14% with a Pb cathode [illegible] At the anode [illegible] 1st knee a limiting current [illegible] but at the 2nd knee O_2 [illegible] at the anode [illegible] accounted only by the [illegible] of a film on the anode acting as a barrier retarding the passage of anions. (b) C steel was polished mechanically with 00 paper and then electrochemically as in (a) with [illegible] amp./sq. dm. The capacity *C* and the transient resistance *R* (cf. Shetahilletti, C.A. 37, [illegible]) of the double layer was detd. in *N* K_2SO_4. The values of *C* and *R* after mech. polishing were 60.8 microfarads/sq. cm. and 2.9 ohms/sq. cm., resp., whereas after electrochem. polishing the respective values were 38.0 and 23.1. This indicated the existence of an oxide film; this film was not sol. in H_2O nor in the electrolyte for 5 sec. The film dissolved in the electrolyte in 5 min. Treatment with 10% NaOH at [illegible] lowered *C* and raised *R*. Apparently, hot NaOH solidified the film: a fact supported

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Khar... [illegible handwriting] ...S.P.

by corrosion expts. (c) Substituting Cr_2O_3 in the electrolyte for CrO_3 gave a light gray dull surface with C = 115 microfarads/sq. cm. and R = 2.91 ohms/sq. cm., indicating a destruction of the film without CrO_3. The same type of film etching was observed at lower temps.: at 20° C = 62.6 microfarads/sq. cm. and R = 14.6 ohms/sq. cm. (electropolished as in (b)). (d) C, R, and the selective capacity Q of the polished surface were detd. as functions of the duration of polishing. During the 1st min. no effect was noted. At the beginning of the 2nd min. C dropped and R increased. At the beginning of the 5th min. C and R became const. The curve of Q vs. t was similar to that of R vs. t. (e) C and R were measured in the electrolyte used for electropolishing 0.25 m. after polishing was completed. C decreased and R increased. This indicated that the oxide film formed at the end of the 2nd knee of the t vs. E curve obtained in (a). This justified the assumption that the oxide film formed during electrolysis. I. Bencowitz

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RG

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APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00051682(

FEDOT'YEV, Nikolay Pavlovich; GRILIKHES, Semen Yakovlevich; LAYNER, V.I., professor, retsenzent; KHEYFETS, B.L., kandidat khimicheskikh nauk, redaktor; VASIL'YEVA, V.P., redaktor izdatel'stva; POL'SKAYA, R.G., tekhnicheskiy redaktor

[Electrochemical pickling, polishing and oxidation of metals] Elektrokhimicheskoe travlenie, polirovanie i okseidirovanie metallov. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. lit-ry, 1957. 242 p. (MLRA 10:5)
(Oxidation, Electrolytic) (Electrolytic polishing) (Metals--Pickling)

FEDOT'YEV, N.P.; VECHESLAVOV, P.M.; OSTROUMOVA, N.M.; GRILIKHES, S.Ya.

Increasing the durability of gold and silver plated coatings.
Leg.prom. 17 no.3:43-44 Mr 57. (MLRA 10:4)
(Gold plating) (Silver plating)

GRILIKHES, S. Ya.

7-4E2c

L 100167 (Russian.) Dependence of the Anodic Potential of Steel on the Electrolyte Composition During Electrochemical Polishing. Zavisimost' Anodnogo potentsiala stali ot sostava elektrolita pri elektrokhimicheskom polirovanii. N. P. Fedot'ev and S. Ia. Grilikhes. Zhurnal Prikladnoi Khimii, v. 30, Feb. 1957, p. 211-213.

Formation of salt and oxide layers determine the limits of current, as shown by curves of the anodic potential. The increase of the reflecting ability of steel anode as a function of temperature. Effect of Cr ions on electrochemical polishing.

GRILIKHES, S. Ya.

18

Mechanism of processes of electrogrinding of metals. — S. Ya. Grilikhes and N. P. Fedot'ev. *Zhur. Priklad. Khim.* 30, 625-33(1957); cf. C.A. 51, 10274d.—The process of smoothening the microreliefs of the surface is defined as electrogrinding, and is differentiated from electropolishing which is characterized by the formation of bright reflective surfaces. The former functions by the difference in the soly. rates at the high and low points of the surface topography, whereas the latter is independent of the initial roughness of the surface and functions primarily through the formation of an oxidized anodic film. The following series of expts. supported these postulates. (a) C steel was treated in an electrolyte contg. H_3PO_4 65 and H_2SO_4 15% with a c.d. of 40 amp./sq. dm. at 70°. Most of the smoothening (grinding) of the surface occurred during the first 10 min., the initial rate of grinding increased very rapidly with the initial roughness of the surface. (b) Pieces of C steel of different roughnesses were treated at 80° as in a with the exception that up to 6% of CrO_3 was added to the electrolyte. Within 10 min. the reflective power of the surface (compared with that of a Ag mirror) increased rapidly as the CrO_3 concn. increased from zero to 3% and above, i.e. the concn. of CrO_3 at which the oxidation film formed and the anodic potential changed (cf. following abstr.). On the other hand the degree of smoothening of the surface remained const. and independent of the CrO_3 concn. whereas [illegible]

[illegible] (c) One end of a C-steel plate, all of which was roughened with no. 160 emery paper, was treated as in [illegible]

[illegible]

4E2C

Chem

GRILIKHES, S. YA.

Condition of surface and anodic potential of copper and nickel during electrochemical polishing. N. P. Fedot'ev and S. Ya. Grilikhes. *Zhur. Priklad. Khim.* 30, 643-8 (1957); cf. C.A. 51, 1027d.—The capacity and the transition resistance of the elec. double layer formed during electropolishing of Cu and Ni (2 min. at 20° with a c.d. of 4 amp./sq. dm.) indicated the presence of a passivation film sepg. the metal from the electrolyte. Ni was polished in the electrolyte (I) previously used with C steel (*loc. cit.*) and Cu in an electrolyte (II) contg. 74 H_3PO_4 and 14% H_2O without CrO_3 and with 6% CrO_3. The *i-v* curves of Ni in I at 80° were similar to those of C steel. The fact that Ni (not Fe) could be polished in H_2SO_4 without CrO_3 was attributed to the fact that Ni passivated more readily than steel. The *i-v* curves of Cu in II exhibited the 2 sections of limiting current similar to those of other metals. Whereas in electrolyte (III) without CrO_3 contg. H_3PO_4 and H_2O 26% there was only one section of limiting current. The current efficiency in III, with a c.d. of 0.07 amp./sq. dm., was 95% Cu^{++} whereas in II it was 116%. Above the limiting c.d. (5 amp./sq. dm.) in III it was 63% and in II 47%. The high current efficiency with a low c.d. was ascribed to the soln. of Cu. The passive film formed on the Cu surface contained some Cr crystals. I. Bencowitz

fra PB
MT

SOV/137-58-9-19598

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 9, p 210 (USSR)

AUTHORS: Fedot'yev, N.P., Grilikhes, S.Ya., Foroponova, N.L., Yu-Chen-Dya, V[redacted]

TITLE: Ornamental Finishing of Aluminum (Dekorativnaya otdelka alyuminiya)

PERIODICAL: Tr. Leningr. tekhnol. in-ta im. Lensoveta, 1957, Nr 43, pp 38-42

ABSTRACT: A method for ornamental finishing of Al by means of its electrochemical oxidation followed by adsorption coloring of the oxide film is described. The operations of the industrial process of coloring Al golden are examined. The importance of conducting the chemical and electrochemical polishing of the metal before the oxidation and the correct selection of the coloring agents is emphasized. The compositions of solutions for the chemical and electrochemical polishing, the working conditions, and the comparative characteristics of the operation are adduced. Mixtures of alizarin red and mordant true yellow is recommended for the coloring. Depending upon the ratio of their concentrations in the solution it is possible to tint the oxide films the color of pure gold and of its alloys with Cu and Ag. R.S.

Card 1/1

1. Aluminum--Processing 2. Aluminum--Oxidation 3. Aluminum--Color 4. Copper--Applications 5. Silver--Applications

IL'IN, Vitaliy Alekseyevich; FEDOROV, V.A., inzh., retsenzent; VYACHESLAVOV, P.M., dots., kand. khim. nauk, red.; GRILIKHES, S.Ya., kand. tekhn. nauk, red.; YAMPOL'SKIY, A.M., inzh., red.; SIMONOVSKIY, N.Z., red. izd-va; SOKOLOVA, L.V., tekhn. red.

[Tin and lead plating] Luzhenie i svintsevanie. Pod obshchei red. P.M. Viacheslavova. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. lit-ry, 1958. 31 p. (Bibliotechka gal'vanotekhnika, no.4). (Tin plating) (Lead plating) (MIRA 11:9)

VYACHESLAVOV, Petr Mikhaylovich, dots., kand. khim. nauk; FEDOT'YEV, N.P., prof., doktor khim. nauk, retsenzent; GRILIKHES, S.Ya., kand. tekhn. nauk, red.; YAMPOL'SKIY, A.M., inzh., red.; SIMONOVSKIY, N.Z., red. izd-va; SOKOLOVA, L.V., tekhn. red.

[Alloy plating] Gal'vanicheskie pokrytiia splavami. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. lit-ry, 1958. 37 p. (Biblio-techka gal'vanotekhnika, no.7). (MIRA 11:9)
(Electroplating)

GRILIKHES, S.Ya.

VYACHESLAVOV, Petr Mikhaylovich, dots., kand. khim. nauk; LANTRATOV, M.F., dots., kand. khim. nauk, retsenzent; GRILIKHES, S.Ya., kand. tekhn. nauk, red.; YAMPOL'SKIY, A.M., inzh., red.; SIMONOVSKIY, N.Z., red. izd-va; SOKOLOVA, L.V., tekhn. red.

[Fundamentals of electroplating] Osnovnye poniatiia o gal'vanotekhnike. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. lit-ry, 1958. 38 p. (Bibliotechka gal'vanotekhnika, no.1). (Electroplating) (MIRA 11:9)

GRILIKHES, S. Ya.

YAMPOL'SKIY, Anatoliy Mikhaylovich, inzh.; LEUSSKIY, I.F., inzh., retsenzent; VYACHESLAVOV, P.M., dots., kand. khim. nauk, red.; GRILIKHES, S.Ya., kand. tekhn. nauk, red.; VARKOVETSKAYA, A.I., red. izd-va; SOKOLOVA, L.V., tekhn. red.

[Electroplating with rare and precious metals] Gal'vanotekhnika dragotsennykh i redkikh metallov. Pod obshchei red. P.M.Viacheslavova. Moskva, Gos. nauchno-tekhn. izd-vo mashino-stroit. lit-ry, 1958. 41 p. (MIRA 11:9)

(Electroplating)

GRILIKHES, S.Ya.

YAMPOL'SKIY, Anatoliy Mikhaylovich, inzh.; TSAY, Ye.T., inzh., retsenzent; VYACHESLAVOV, P.M., dots., kand. khim. nauk, red.; GRILIKHES, S.Ya., kand. tekhn. nauk, red.; VARKOVETSKAYA, A.I., red. izd-va; SOKOLOVA, L.V., tekhn. red.

[Copper and nickel plating] Mednenie i nikelirovanie. Pod obshchei red. P.M. Viacheslavova. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. lit-ry, 1958. 41 p. (Bibliotechka gal'vanotekhnika, no.5). (MIRA 11:9)

(Copper plating)
(Nickel plating)

GRILIKHES, S. Ya.

IL'IN, Vitaliy Alekseyevich; FEDOROV, V.A., inzh., retsenzent; VYACHESLAVOV, P.M., dots., kand. khim. nauk, red.; GRILIKHES, S.Ya., kand. tekhn. nauk, red.; YAMPOL'SKIY, A.M., inzh., red.; SIMONOVSKIY, N.Z., red. izd-va; SOKOLOVA, L.V., tekhn. red.

[Zinc and cadmium plating] TSinkovanie i kadmirovanie. Pod obshchei red. P.M. Viacheslavova. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. lit-ry, 1958. 44 p. (Bibliotechka gal'vanotekhnika, no.3). (Zinc plating) (Cadmium plating) (MIRA 11:10)

GRILIKHES, S. Ya.

BIBIKOV, Nikolay Nikolayevich; KEMTSEVA, F.Ye., inzh., retsenzent; VYACHESLAVOV, P.M., dots., kand. khim. nauk, red.; GRILIKHES, S.Ya., kand. tekhn. nauk, red.; YAMPOL'SKIY, A.M., inzh., red.; SIMONOVSKIY, N.Z., red. izd-va; SOKOLOVA, L.V., tekhn. red.

[Electroplating with a periodic reverse current] Gal'vanicheskie pokrytiia na toke peremennoi poliarnosti. Pod obshchei red. P.M. Viacheslavova. Moskva, Gos. nauchno-tekhn. izd-vo mashino-stroit. lit-ry, 1958. 47 p. (Bibliotechka gal'vanotekhnika, no.10). (Electroplating) (MIRA 11:9)

PHASE I BOOK EXPLOITATION SOV/3961

Grilikhes, Semen Yakovlevich

Podgotovka izdeliy pered gal'vanicheskimi pokrytiyami i otdelka pokrytiy (Preparation of Articles for Electroplating and Finishing) Moscow, Mashgiz, 1958. 60 p. (Series: Bibliotechka gal'vanotekhnika, vyp. 2) 8,000 copies printed.

General Ed.: P. M. Vyacheslavov, Candidate of Chemistry, Docent; Reviewer: V. L. Kheyfets, Candidate of Technical Sciences; Editorial Board: P. M. Vyacheslavov (Chairman), S. Ya. Grilikhes, Candidate of Technical Sciences, and A. M. Yampol'skiy, Engineer; Ed. of this book: A. M. Yampol'skiy; Managing Ed. for Literature on the Design and Operation of Machinery (Leningrad Division, Mashgiz): F. I. Fetisov, Engineer; Ed. of Publishing House: V. P. Vasil'yeva; Tech. Ed.: L. V. Sokolova.

PURPOSE: This book is intended for skilled workers, laboratory technicians, and foremen of electroplating and electroforming shops.

COVERAGE: The book is the second volume of the "Little Library of Electrodeposition" series. The mechanical treatment, degreasing, pickling, and chemical and electrochemical polishing of metalware before electroplating

Card 1/ 4

and finishing are described. Characteristics of buffing and polishing materials, composition of solutions, and working conditions for the chemical and electrochemical processing of various metals and alloys are discussed. Possible malfunctions in preparatory and finishing operations and methods for their elimination are also reviewed. Chemical polishing and ultrasonic cleaning are discussed briefly. No personalities are mentioned. There are 11 references, all Soviet.

TABLE OF CONTENTS:

ASE I BOOK EXPLOITATION SOV/3967

Grilikhes, Semen Yakovlevich

Zashchita metallov oksidnymi i fosfatnymi plenkami (Protection of Metals With Oxide and Phosphate Films) Moscow, Mashgiz, 1958. 64 p. (Series: Bibliotechka gal'vanotekhnika, vyp. 9) Errata slip inserted. 8,500 copies printed.

General Ed.: P.M. Vyacheslavov, Candidate of Chemistry, Docent; Reviewer: P.L. Chernova, Engineer; Editorial Board: P.M. Vyacheslavov (Chairman). S.Ya. Grilikhes, Candidate of Technical Sciences, and A.M. Yampol'skiy, Engineer; Ed. of this book: A.M. Yampol'skiy; Managing Ed. for Literature on the Design and Operation of Machinery (Leningrad Division, Mashgiz): F.I. Fetisov, Engineer; Ed. of Publishing House: Ye. K. Gofman; Tech. Ed.: L.V. Sokolova.

PURPOSE: This book is intended for skilled workers, laboratory technicians, and foremen of electroplating and electroforming shops

COVERAGE: The book is the ninth volume of the "Little Library of Electrodeposition" series. It contains basic information on methods of oxidizing and phosphatizing ferrous, nonferrous, and light metals; and on the properties of

Card 1/ 3

oxide and phosphate films. Some technical problems and the practical application of oxidizing and phosphatizing processes are also reviewed. No personalities are mentioned. There are 13 references, all Soviet.

TABLE OF CONTENTS:

AVAILABLE: Library of Congress (TS670.B6)

JA/cdu/gmp
8-23-60

Card 3/3

VAYNER, Yakov Vul'fovich; KUSHNAREV, B.P., inzh., retsenzent; VYACHESLAVOV, P.M., dots., kand. khim. nauk, red.; GRILIKHES, S.Ya., kand. tekhn. nauk, red.; YAMPOL'SKIY, A.M., inzh., red.; SIMONOVSKIY, M.Z., red. izd-va; SOKOLOVA, L.V., tekhn. red.

[Equipment of electroplating shops] Oborudovanie gal'vanicheskikh tsekhov. Pod red. P.M. Viacheslavova. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. lit-ry, 1958. 77 p. (Bibliotechka gal'vanotekhnika, no.11). (MIRA 11:10)

(Electroplating)

CHERKEZ, Mikhail Borisovich; BOGORAD, L.Ya., inzh. retsenzent; VYACHESLAVOV, P.M., dots., kand. khim. nauk, red.; GRILIKHES, S.Ya., kand. tekhn. nauk, red.; YAMPOL'SKIY, A.M., inzh., red.; SIMONOVSKIY, N.Z., red., izd-va; SOKOLOVA, L.V., tekhn. red.

[Chrome and iron plating] Khromirovanie i zheleznenie. Pod red. P.M. Viacheslavova. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. lit-ry, 1958. 84 p. (Bibliotechka gal'vanotekhnika, no.6). (Electroplating) (MIRA 11:9)

KRUGLOVA, Yekaterina Georgiyevna,inzh.; VYACHESLAVOV, Petr Mikhaylovich,dots., kand. khim. nauk,; CHERNOVA, P.L.,inzh.retsenzent,; GRILIKHES, S.Ya.,kand. tekhn. nauk, red.; YAMPOL'SKIY,A.M.,inzh.,red.; VARKOVETSKAYA, A.I.,red. izd-va,; SOKOLOVA, L.V.,tekhn. red.

[Control of plating baths and coatings] Kontrol' gal'vanicheskikh vann i pokrytii. Moskva,Gos. nauchno-tekhn. izd-vo mashinostroit. lit-ry, 1958. 107 p. (Bibliotechka gal'vanotekhnika, no. 12). (MIRA 11:12)

(Electroplating)

5(2, 4) SOV/80-32-5-44/52

AUTHORS: Fedot'yev, N.P., Vyacheslavov, P.M., Kruglova, Ye.G., Grilikhes, S.Ya.

TITLE: The Corrosion-Resistance of Some Galvanic Alloys Under Tropical-Like Conditions

PERIODICAL: Zhurnal prikladnoy khimii, 1959, Vol 32, Nr 5, pp 1165-1167 (USSR)

ABSTRACT: Binary and ternary alloys are used for preparing protective coating on metals by the galvanic method. The coatings were tested in a heat and moisture chamber imitating tropical conditions. Zinc and zinc-tin coatings were passivated by a mixture consisting of 3 g/l sodium dichromate, 10 g/l caustic soda, 5 g/l OP-10 (polyethyleneglycolic ether). The temperature of the solution was 90 - 95°C, the duration 5 - 10 sec. The coatings were applied to carbon steel St3. The corrosion-resistance decreases in the following order: passivated zinc-cadmium alloy (83% Cd), passivated cadmium, passivated tin-zinc alloy (20% Zn), passivated tin-cadmium alloy (60 - 40% Cd), copper-tin alloy (40 - 75% Sn), copper (38 - 78%)-tin (18 - 52%)-zinc (3 - 10%) alloy, copper (37 - 53%)-tin (27 - 35%)-cadmium (9 - 26%) alloy non-passivated zinc and cadmium.

Card 1/2

SOV/80-32-5-44/52

The Corrosion-Resistance of Some Galvanic Alloys Under Tropical-Like Conditions

There are 7 references, 4 of which are Soviet, 2 English and 1 German.

SUBMITTED: September 19, 1958

Card 2/2

S/080/60/033/005/004/008

AUTHORS: Fedot'yev, N.P., Grilikhes, S.Ya., Zil'berman, B.Ya.

TITLE: Deep Anodizing of Aluminum at Room Temperature

PERIODICAL: Zhurnal prikladnoy khimii, 1960, Vol 33, No 5, pp 1133 - 1141

TEXT: Anodizing of aluminum in sulfuric acid at room temperature produces only thin films 10 - 15 μ thick. It is difficult to obtain films of 80 - 150 μ due to thermal processes taking place in the electrolysis. To obtain thick films, the current density must be increased and the H_2SO_4 concentration and the temperature of the electrolyte must be decreased. An increase in the current density causes heating of the solution, however. According to Kosha-Shomodi [Ref 1] the dissolution rate of the film increases logarithmically with an increase in temperature. Deep anodizing, therefore, depends on the degree of heat removal from the reaction zone. The heat can be removed through the metal to be anodized or through the electrolyte. The first method has been developed by Tomashov [Ref 2]. It consists in cooling the part under treatment by a cooling solution in its interior. The second method consists in cooling and mixing the electrolyte, the temperature of

Card 1/2

S/080/60/033/005/004/008

Deep Anodizing of Aluminum at Room Temperature

which is reduced to -5°C. The mixing is carried out by compressed air. Kosha-Shomodi recommends the use of 10 a/dm^2 and an electrolyte temperature of 10°C in order to obtain thick films in 15%-H_2SO_4. Intensive mixing of the electrolyte reduces the temperature of the anode due to the removal of the Joule effect. The effect of the tension was investigated at 500, 435 and 400 w/dm^2. It was shown that a constant current intensity shows a lower Joule effect and consequently lesser heating of the anode than the corresponding average constant current density. The use of intensive mixing of the electrolyte and a constant current intensity facilitate the production of oxide films of considerable thickness at a temperature of the solution of up to 20°C. A low electrolyte temperature and low H_2SO_4 concentration further the production of films with increased hardness but also with increased brittleness.
There are 8 graphs and 5 references: 4 Soviet and 1 English.

SUBMITTED: November 24, 1959

Card 2/2

1530
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S/080/60/033/009/008/021
A003/A001

AUTHORS: Fedot'yev, N.P., Grilikhes, S.Ya., Foroponova, N.L.

TITLE: Anode Processes in Electrochemical Polishing of Aluminum

PERIODICAL: Zhurnal prikladnoy khimii, 1960, Vol. 33, No. 9, pp. 2079-2084

TEXT: The change in the potential of an aluminum anode depending on the conditions of the electrolysis was studied. The experiments were made with samples of aluminum sheet of the A0 (AO) grade with a thickness of 1 mm. Lead sheet served as cathode. The anode treatment of aluminum in a 10-30%-solution of sulfuric acid at a temperature of 16-22°C is accompanied by the formation of an oxide layer on its surface which is several tens of microns thick. A temperature increase leads to an increase in the dissolution rate of the film in the electrolyte. The anode treatment of aluminum in 85%-phosphoric acid at 70°C is accompanied by the formation of a whitish film consisting apparently of phosphates. In a mixture of sulfuric and phosphoric acids the periodical phenomena were observed within a narrower range and at lower current densities. The introduction of up to 4% of CrO_3 into the electrolyte produces a film of high luster. The effect of the temperature was investigated on an electrolyte containing 45%

Card 1/2

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Anode Processes in Electrochemical Polishing of Aluminum

H_3PO_4, 30% H_2SO_4, 4% CrO_3, 21% H_2O. It was shown that a temperature increase from 20 to 40°C leads to an increase in luster from 36 to 84%. The anode current density, if it surpasses a limit value, affects the reflecting power of the metal. There are 5 graphs and 7 references: 6 Soviet, 1 German.

SUBMITTED: February 22, 1960

Card 2/2

VYACHESLAVOV, Petr Mikhaylovich, kand. khim. nauk, dots.; GRILIKHES, S.Ya., kand. tekhn. nauk, red.; YAMPOL'SKIY, A.M., inzh., red. ONISHCHENKO, R.N., red. izd-va; BARDINA, A.A., tekhn. red.

[Alloy plating] Pokrytiia splavami. Izd.2., dop. i perer. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. lit-ry, 1961. 67 p. (MIRA 14:11)
(Bibliotechka gal'vanotekhnika, no.6)
(Electroplating) (Alloys)

YAMPOL'SKIY, Anatoliy Mikhaylovich,inzh.; NEMTSEVA,F.Ye.,inzh., retsenzent; VYACHESLAVOV, P.M., kand. khim.nauk, dots., red.; GRILIKHES,S.Ya., kand. tekhn. nauk, red.vypuska; POMICHEV, A.G., red. izd-va; BORDINA, A.A., tekhn. red.

[Copper plating and nickel plating] Mednenie i nikelirovanie. Izd.2., dop. i perer. Pod red. P.M.Viacheslavova. Moskva, Mashgiz, 1961. 57 p. (Bibliotechka gal'vanotekhnika, no.4) (MIRA 14:12)
(Copper plating) (Nickel plating)

POPILOV, Lev Yakovlevich; KAMENETSKIY, M.P., kand. tekhn. nauk, retsenzent; VYACHESLAVOV, P.M., kand. khim. nauk, dots., red.; GRILIKHES, S.Ya., red. vypuska; YAMPOL'SKIY, A.M., inzh. red.; ONISHCHENKO, R.N., red. izd-va; BARDINA, A.A., tekhn. red.

[Electroplating] Gal'vanoplastika. Pod red. P.M.Viacheslavova. Moskva, Mashgiz, 1961. 62 p. (Bibliotechka gal'vanotekhnika, no.6) (MIRA 14:12)

(Electroplating)

BIBIKOV, Nikolay Nikolayevich; MASLOV, N.N., kand.tekhn.nauk, retsenzent; VYACHESLAVOV, P.M., kand.khim.nauk, dotsent, red.; GRILIKHES, S.Ya., kand.tekhn.nauk, red.vypuska; YAMPOL'SKIY, A.M., inzh., red.; ONISHCHENKO, R.N., red.izd-va; BAKUNINA, A.A., tekhn.red.

[Metal deposition by currents of alternating polarity] Osazhdenie metallov na toke peremennoi poliarnosti. Izd.2., dop. i perer. Pod red. P.M.Viacheslavova. Moskva, Mashgiz, 1961. 68 p. (Bibliotechka gal'vanotekhnika, no.10). (MIRA 14:12)

(Electroplating)

GRILIKHES, Semen Yakovlevich; VYACHESLAVOV, P.M., kand. khim. nauk, dots., red.; YAMPOL'SKIY, A.M., red. vypuska; ONISHCHENKO, R.N., red. izd-va; BARDINA, A.A., tekhn. red.

[Preparation of machine part surfaces for electroplating] Podgotovka poverkhnosti detalei pered gal'vanicheskim pokrytiem. Pod red. P.M.Viacheslavova. Izd.2., dop. i perer. Moskva, Mashgiz, 78 p. (Bibliotechka gal'vanotekhnika, no.1) 1961. (MIRA 15:1)

(Metals—Pickling) (Grinding and polishing)

CHERKEZ, Mikhail Borisovich; VORONITSYN, I.S., kand. tekhn. nauk, retsenzent; VYACHESLAVOV, P.M., kand. khim.nauk, dots., red.; GRILIKHES, S.Ya., kand. tekhn. nauk, red.; YAMPOL'SKIY, A.M., inzh., red.; SIMONOVSKIY, N.Z., red. izd-va; BARDINA, A.A., tekhn. red.

[Chromium plating and iron plating] Khromirovanie i zheleznenie. Izd.2., dop. i perer. Pod red. P.M.Viacheslavova. Moskva, Mashgiz. 1961. 83 p. (Bibliotechka gal'vanotekhnika, no.5) (MIRA 14:12)

(Chromium plating) (Iron plating)

VAYNER, Yakov Vul'fovich; KUSHNAREV, B.P., inzh., retsenzent; VYACHESLAVOV, P.M., kand.khim.nauk, dotsent, red.; YAMPOL'SKIY, A.M., inzh., red.vypuska; GRILIKHES, S.Ya., kand.tekhn.nauk, red.; FOMICHEV, A.O., red.izd-va; BARDINA, A.A., tekhn.red.

[Equipment of electroplating plants] Oborudovanie gal'vanicheskikh tsekhov. Izd.2., dop. i perer. Pod red. P.M.Viacheslavova. Moskva, Mashgiz, 1961. 93 p. (Bibliotechka gal'vanotekhnika, no.11) (MIRA 14:12)

(Electroplating--Equipment and supplies)

KRUGLOVA, Yekaterina Georgiyevna, inzh.; VYACHESLAVOV, Petr Mikhaylovich, dots., kand. khim. nauk; SMOTKINA, B.R., inzh., retsenzent; GRILIKHES, S.Ya., kand. tekhn. nauk, red.; YAMPOL'SKIY, A.M., red.; ONISHCHENKO, R.N., red. izd-va; BARDINA, A.A., tekhn. red.

[Control of electroplating baths and coatings] Kontrol' gal'vanicheskikh vann i pokrytii. Izd.2., dop. i perer. Moskva, Mashgiz, 1961. 146 p. (Bibliotechka gal'vanotekhnika, no.12) (MIRA 15:4)

(Electroplating--Equipment and supplies)

IL'IN, Vitaliy Alekseyevich; BRUK, E.S., inzh., retsenaent; VYACHESLAVOV, P.M., kand. khim.nauk,dots., red.; GRILIKHES, S.Ya., kand.tekkhn. nauk, red.; YAMPOL'SKIY, A.M., inzh., red.; MITARCHUK, G.A., red. izd-va; BARDINA, A.A., tekhn. red.

[Zinc and cadmium plating]TSinkovanie i kadmirovanie. Pod red. P.M.Viacheslavova. Izd.2., dop. i perer. Moskva, Mashgiz, 1961. 48 p. (Bibliotechka gal'vanotekhnika, no.2) (MIRA 16:2)
(Zinc plating) (Cadmium plating)

IL'IN, Vitaliy Alekseyevich; BOGORODITSKAYA, V.A., inzh., retsenzent; VYACHESLAVOV, P.M., kand. khim. nauk, dots., red.; GRILIKHES, S.Ya., kand. tekhn. nauk, red.; YAMPOL'SKIY, A.M., inzh., red.; DUBUSOVA, G.A., red. izd-va; BARDINA, A.A., tekhn. red.

[Tin and lead plating]Luzhenie i svintsevanie. Pod red. P.M. Viacheslavova. Izd.2., dop. i perer. Moskva, Mashgiz, 1961.33 p. (MIRA 16:2)
(Bibliotechka gal'vanotekhnika, no.3)
(Tin plating) (Lead plating)

30204
S/080/61/034/011/019/020
D204/D301

15.1123

AUTHORS: Yakubchik, A.I., Grilikhes, S.Ya., Tikhomirov, B.I., and Purlova, V.S.

TITLE: The bonding of polyethylene to metals and to rubber

PERIODICAL: Zhurnal prikladnoy khimii, v. 34, no. 11, 1961, 2579 - 2581

TEXT: A series of adhesives has been developed which alloy good bonding to be achieved between polyethylene and brass of brass-plated metals and with rubber, without the need for pretreating the surfaces. A short review of the Western work in this field is given and it is considered that partially hydrogenated, linear 1, polybutadiene would form the basis of a satisfactory adhesive, owing to structural similarities with polyethylene. Adhesive compositions were as follows: Partially hydrogenated 1,4 polybutadiene 100, ZnO 40-50, petroleum ether 3-5, sulphur 2-5, trimethyl dihydroquinoline 1, stearic acid 0.5 and mercaptobenzazole 0.5 - 1 parts by weight. The adhesive was dissolved in 10-15 ml toluene per g. of mixture. The solution was applied to the surfaces to be

Card 1/2

bonded whilst still hot, dried to produce films and the surfaces were then pressed together at 100 kg/cm^2, for 10-20 minuts, at 130-200°C. The degree of unsaturation of the polybutadiene was varied between 7 and 25 % and brass containing 65-75 % Cu was used. The bonding strengths, (50 - 100 kg/cm^2), were higher when 1,4 polybutadiene with lower degrees of unsaturation were used. Further improvements in the strength of adhesion are anticipated, as the high values reported in the present paper are said to be easy to obtain under far from ideal conditions. Research into brass-plating is now in progress to extend the above method to metals other than brass. Very good bonding to rubber was obtained, whose strength could not, however, be measured, since the rubber parted in preference to the joint. The bonding mechanism is briefly discussed. There are 1 table and 5 references: 3 Soviet-bloc and 2 non-Soviet-bloc. The references to English-language publications read as follows: I.D. Morron, India Rubber World, 98, 4, 55, 1938; H. I. Peters and W.H. Lockwood, Rubber World, 138, 3, 418, 1958

ASSOCIATION. Leningradskiy gosudarstvennyy universitet (Leningrad State University)

SUBMITTED: June 6, 1961

Card 2/2

3043
S/080/61/034/012/008/017
D258/D305

1.1800

AUTHORS: Grilikhes, S.Ya., Zil'berman, B.Ya., and Krasikov, B.S.

TITLE: Investigating oxide films on aluminum with the aid of impedance measurements

PERIODICAL: Zhurnal prikladnoy khimii, v. 34, no. 12, 1961, 2685 - 2691

TEXT: The authors attempted the study of the barrier layer on anodized Al, by measuring the capacity C, and the intermediate resistance R, and plotting them against the quantity of passed electricity, Q. The resulting plots of C against Q in "normal" conditions show either minima or monotonously rising values of C. The minima grow more pronounced with the increasing severity of the concentrations of H_2SO_4. Samples, anodized in severe conditions, require lesser energy expenditure on anodizing to attain minimum values of C. Lower temperatures raise the capacity, thus indicating a marked increase of the pore area in the immediate neighborhood of the barrier layer. Anodizing at constant W produces more com-

Card 1/3

Investigating oxide films on ...

pact films than at constant D_a. The quantity of generated heat and the rate of its removal is a further factor in the creation of the film. Thus, almost identical curves of C vs. Q are obtained with 2 samples, one anodized at -20°C with D_a = 5A/dm^2 in a non-stirred electrolyte and the other at +180°C, W = const, $D_{a(in)}$ = 18A/dm^2.

The curves of R vs. Q show that thicker films are obtained at constant W rather than at constant D_a. Also, anodizing at lower temperatures results in thicker films, all other factors being equal. Based on these results and on earlier evidence, the authors describe the anodizing process as follows: As the current is switched on, a film of an uneven thickness is formed. This non-uniformity stems from the irregularity of the metal surface and is even more pronounced at "severe" conditions. Consequently, the film has a large equivalent cross-section which, however, diminishes toward the end of the process, as the film grows thicker. During the process the pores grow narrower toward the peaks, provided the heat is swiftly removed; otherwise, corrosion at the peaks sets in. This corrosion is intensified by the evolution of oxygen which adheres to the walls of the pores, thus preventing diffusion and removal of heat.

Card 2/3

Finally, at constant W, initial conditions are very severe but the heat (at the peaks) rises slowly and the concentration of H^+ falls steadily; at constant D_a both temperature and concentration of H^+ at the bottom of the pores is steadily rising and corrosion is facilitated. There are 6 figures and 9 references: 8 Soviet-bloc and 1 non-Soviet-bloc. The reference to the English-language publication reads as follows: J.M. Kape, Met. Ind., 91, 4-12, 1957.

SUBMITTED: September 23, 1960

Card 3/3

GAVRILOVA, N.A.; GRILIKHES, S.Ya., kand. tekhn. nauk, red.

[Preparing metal surfaces for electroplating; a bibliographic index] Podgotovka poverkhnosti metallov pod gal'vanicheskie pokrytiia; bibliograficheskii ukazatel'. Leningrad, Leningr. dom nauchno-tekhn.propagandy, 1962. 36 p. (MIRA 16:10)
(Bibliography—Electroplating)

GRILIKHES, S. Ya.

PHASE I BOOK EXPLOITATION SOV/6308

Fedot'yev, N. P., Doctor of Chemical Sciences, Professor, N. N. Bibikov, P. M. Vyacheslavov, and S. Ya. Grilikhes

Elektroliticheskiye splavy (Electrolytic Alloys) Moscow, Mashgiz, 1962. 311 p. 12,500 copies printed.

Reviewer: A. F. Alabyshev, Doctor of Technical Sciences, Professor; Ed.: A. L. Rotinyan, Doctor of Technical Sciences, Professor; Eds. of Publishing House: T. L. Leykina and M. A. Chfas; Tech. Ed.: M. M. Peterson; Managing Ed. for Literature on Machine-Building Technology, Leningrad Department, Mashgiz: Ye. P. Naumov, Engineer.

PURPOSE: This book is intended for engineering personnel of plants, scientific research institutes, and design organizations. It may also be useful to students at schools of higher technical education.

Card ~~1/8~~ 1/2

Electrolytic Alloys SOV/6308

COVERAGE: The book reviews the theory and practices of depositing protective, protective-decorative, antifriction, heat-resistant, and other special alloy coatings. Considerable attention is paid to Soviet work in the field of electrolytic deposition of alloys. Experimental data obtained by the authors have been widely used in compiling the present book. The authors thank Engineers V. I. Gribel' and G. P. Andreyeva for their assistance. References follow each chapter.

TABLE OF CONTENTS:

Card ~~2/8~~ 2/2

GRILIKHES, S.Ya., kand. tekhn. nauk; ZIL'BERMAN, B.Ya., inzh.

Thermal processes in deep anodizing of aluminum. Mashinostroenie no.5:88-90 S-O '63. (MIRA 16:12)

L 12677-63

ACCESSION NR: AP3000645 S/0080/63/036/003/0557/0565

EWP(q)/EWT(m)/BDS AFFTC/ASD JD

AUTHOR: Zil'berman, B. Ya.; Fedot'yev, N. P.; Grilikhes, S. Ya.

TITLE: Heat balance of the anodic process in the treatment of aluminum

SOURCE: Zhurnal prikladnoy khimii, v. 36, no. 3, 1963, 557-565

TOPIC TAGS: anodizing of aluminum, oxide formation

ABSTRACT: The process of formation of oxide films on the surface of aluminum during its anodic process is determined to a large extent by its thermal processes which can be quantitatively appraised through the calculation of heat balance. The calculation of the heat balance of these processes is performed by the usual method which allows the use of standard equations needed for the calculation of magnitude. These equations can be obtained directly from the experiment by measuring the internal temperature of the anodic film. In cases where the internal cooling is absent during the process of aluminum anodizing, the heat dissipation is determined mainly by heat conductivity and convection. The discharge of heat is an internal process of the oxidized film and therefore the role of the diffusional phenomena in the dissipation of heat is small. The thick and hard oxide films can be obtained on the surface of aluminum only through the provision of a fairly high value of heat removal coefficient which is determined from the speed of electrolyte agitation.

Card 1/2

L 12677-63
ACCESSION NR: AP3000645

When calculating the speed of electrolyte agitation, other factors such as temperature and composition of the electrolyte, the size of bath and stirrer, current density, the position of the sample in the electrolizer and the uniformity of mixing must be taken into consideration. "The authors express their gratitude to P. G. Romankov for discussion of the materials used in this study." Orig. art. has: 1 table, 7 graphs and several derivations.

ASSOCIATION: none

SUBMITTED: 29Dec61 DATE ACQ: 12Jun63 ENCL: 00

SUB CODE: CH NO REF SOV: 006 OTHER: 001

Card 2/2

L 23514-65 EPR/EWT(m)/EWP(b)/EWP(t) Pa-4 IJP(c) JD
ACCESSION NR: AP4047122 S/0080/64/037/010/2234/2239

AUTHOR: Fedot'yev, N. P.; Grilikhes, S. Ya.; Zil'berman, B. Ya.; Teplen'kiy, I. M.

TITLE: Thickness and dielectric strength of the oxide coatings on aluminum

SOURCE: Zhurnal prikladnoy khimii, v. 37, no. 10, 1964, 2234-2239

TOPIC TAGS: aluminum, anodizing, aluminum oxide coating, dielectric strength, coating thickness, porosity

ABSTRACT: The effects of heating conditions while anodizing aluminum on the thickness, weight, and dielectric strength of the coatings formed were investigated. The dielectric strength of 15-100 micron thick compact anodic coatings decreased exponentially with decreasing thickness and was practically independent of anodizing conditions. The dielectric strength of thicker coatings was determined by the properties of the air space in the porous layer of the film. When anodizing aluminum in H_2SO_4 electrolyte at 10 and 20C the thickness of the oxide

Card 1/2

L 23514-65
ACCESSION NR: AP4047122

coating, its weight and gain in weight, increased proportionally to the amount of the current passed through only if the solution were intensely agitated. A coating about 24 microns thick was formed on passing 1 amp. hr./dm^2. The observed deviations from the linear relationships mentioned were caused by heat processes which increased the dissolution of the coating by the electrolyte, and in turn increased the porosity of the coating. The solution of the oxide coatings was determined by the length of time the anode was in the electrolyte, and by the temperature of the electrolyte and of the surface of the coating, which was in turn determined by the current strength and the coefficient of the heat transfer. Orig. art. has: 3 figures and 1 table.

ASSOCIATION: None

SUBMITTED: 31Oct62 ENCL: 00

SUB CODE: MM NO REF SOV: 008 OTHER: 000

Card 2/2

L 55977-65 EWT(m)/EPF(c)/EWP(i)/EWA(d)/EPR/EWP(t)/EWP(b) Pa-4 IJP(c)
ACCESSION NR: AP5011814 JD/WB

UR/0080/65/038/004/0834/0839
621.357+546.621

AUTHOR: Fedot'yev, N. P.; Grilikhes, S. Ya.; Berkman, Ye. A.; Zil'berman, B. Ya.

TITLE: Formation of passive oxide films during electropolishing of aluminum

SOURCE: Zhurnal prikladnoy khimii, v. 38, no. 4, 1965, 834-839

TOPIC TAGS: aluminum, electrolytic polishing, electric double layer

ABSTRACT: Electropolishing of A00 aluminum was carried out in an electrolyte containing (in wt. %): H_3PO_4, 45; H_2SO_4, 35; CrO_3, 4; H_2O, 16. The state of the aluminum surface after the anodic treatment was studied by measuring the impedance characteristics (capacity of the electric double layer, transition resistance at the metal-solution interface), the thickness of the barrier layer, and the reflectivity as a function of the conditions of electrolysis. It was found that the electropolishing process in acid and also in alkaline electrolytes (15% Na_3PO_4 and 25% Na_2CO_3) involves the formation on the metal surface of a passivating film consisting of a barrier layer and outer porous layer. A considerable increase in the reflectivity of the metal occurs at the very start of the electrolysis, when the barrier

Card 1/2

L 5297-65
ACCESSION NR: AP5011814

layer, which protects the metal from corrosion by the electrolyte, is formed. The electropolishing process is associated with a decrease in capacity and increase in the transition resistance, which changes symbatically with the thickness of the barrier layer. The conditions of electrolysis affect the polishing to the extent that they affect the process of formation of the thin passivating oxide film on the anode. Orig. art. has: 5 figures and 1 table.

ASSOCIATION: none

SUBMITTED: 27Apr63 ENCL: 00 SUB CODE: MM

NO REF SOV: 011 OTHER: 005

Card 2/2

KORITSKIY, Konstantin Ivanovich, prof., doktor tekhn.nauk; GRILIKHES, Yefim Abramovich; KOSTSOV, Aleksandr Aleksandrovich; SOKOLOVA, V.Ye., red.; KOGAN, V.V., tekhn.red.

[Yarn and thread manufacture] Krutil'noe i nitochnoe proizvodstva. Pod red. K.I.Koritskogo. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po legkoi promyshl., 1957. 309 p. (MIRA 11:1)
(Yarn) (Thread)

GRILIKHES, Ye.A., inzh.

Hypothesis on the conventional cell structure of yarn. Tekst. prom. 18 no.3:29-32 Mr '58. (MIRA 11:3)
(Yarn--Testing)

GRILITSKII, D. V.

Grilic'kiĭ, D. V. Compression of two elastic anisotropic bodies taking account of friction forces. Dopovidi Akad. Nauk Ukrain. RSR 1953, 122–126 (1953). (Ukrainian. Russian summary)

The note contains a solution of the plane contact problem of elasticity for two anisotropic elastic bodies, when the tangential stress along the region of contact is proportional to the normal stress. The problem is treated as one in plane deformation. *I. S. Sokolnikoff* (Los Angeles, Calif.).

GRILITSKIY, D. V.

"Some Contact Problems of the Plant Theory of Stability of Anisotropic Media." Cand Phys-Math Sci, L'vov U, L'vov, 1954. (RZhMat, Jan 55)

Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (12)
SO: Sum. No. 556, 24 Jun 55

GRILITSKIY, D.V.

Pressure of a rigid cylinder on the internal surface of a circular cylindrical recess in an anisotropic body. Dop. AN URSR no.3:212-216 '54. (MIRA 8:4)

1. L'vivs'kiy derzhavniy universitet im. Iv.Franka. Predstavleno deystvitel'nym chlenom Akademii nauk USSR G.I.Savinym.
(Elasticity)

GRILITS'KIY, D.V.

Pressure of a rigid circular cylinder on the inner surface of a circular cylindric cavity in an orthotropic body. Dop.AN URSR no.6:419-423 '54. (MLRA 9:9)

1.L'vivs'kiy derzhavniy universitet imeni Iv.Franka. Predstaviv diysniy chlen AN URSR G.M.Savin.

(Elastic plates and shells)

GRILITSKIY, D.V. (L'viv)

Effect of the application of points of forces and moments on the stress distribution in endless anisotropic plates with elliptic hole. Prikl. mekh. 2 no.2:159-166 '56. (MLRA 9:10)

1.L'vivs'kiy dershavniy universitet.
(Strains and stresses) (Elastic plates and shells)

GRILITSKIY, D.V. [Hrylyts'kyi, D.V.] (L'viv)

Compound boundary problem in the theory of elasticity for an orthotropic body having a circular notch [in Ukrainian with summaries in Russian and English]. Prykl.mekh. 3 no.4:378-386 '57. (MIRA 11:2)

1.L'vivs'kiy derzhavniy universitet.
(Elastics solids)

124-58-9-10266

Translation from: Referativnyy zhurnal, Mekhanika, 1958, Nr 9, p 122 (USSR)

AUTHOR: Grilitskiy [Hrylyts'kyy, D. V.]

TITLE: On the Torsion of Anisotropic Variable-section Shafts (O kruchenii anizotropnykh valov peremennogo secheniya) [Pro kruchennya anizotropnykh valiv zminnogo pererizu]

PERIODICAL: Dopovidi ta povidomlennya. L'vivs'k. un-t, 1957, Nr 7, part 3, pp 268-272

ABSTRACT: A solution is found for the deformation problem of the torsion of a shaft which is a body of revolution with cylindrical anisotropy, wherein the axis of anisotropy coincides with the geometric axis of the shaft and all radial planes are planes of elastic symmetry. With these assumptions, as was shown by S. G. Lekhnitskiy [Teoriya uprugosti anizotropnogo tela (Theory of Elasticity of the Anisotropic Body). Moscow, Gostekhizdat, 1950], who solved this problem relative to stresses, a body of revolution remains such even after deformation. An example is adduced for the torsion of an orthotropous shaft (which is a body of revolution) for which the strain function is given in a rational integral (polynomial) form, also expressions for the stress tensor component and the strain vector.

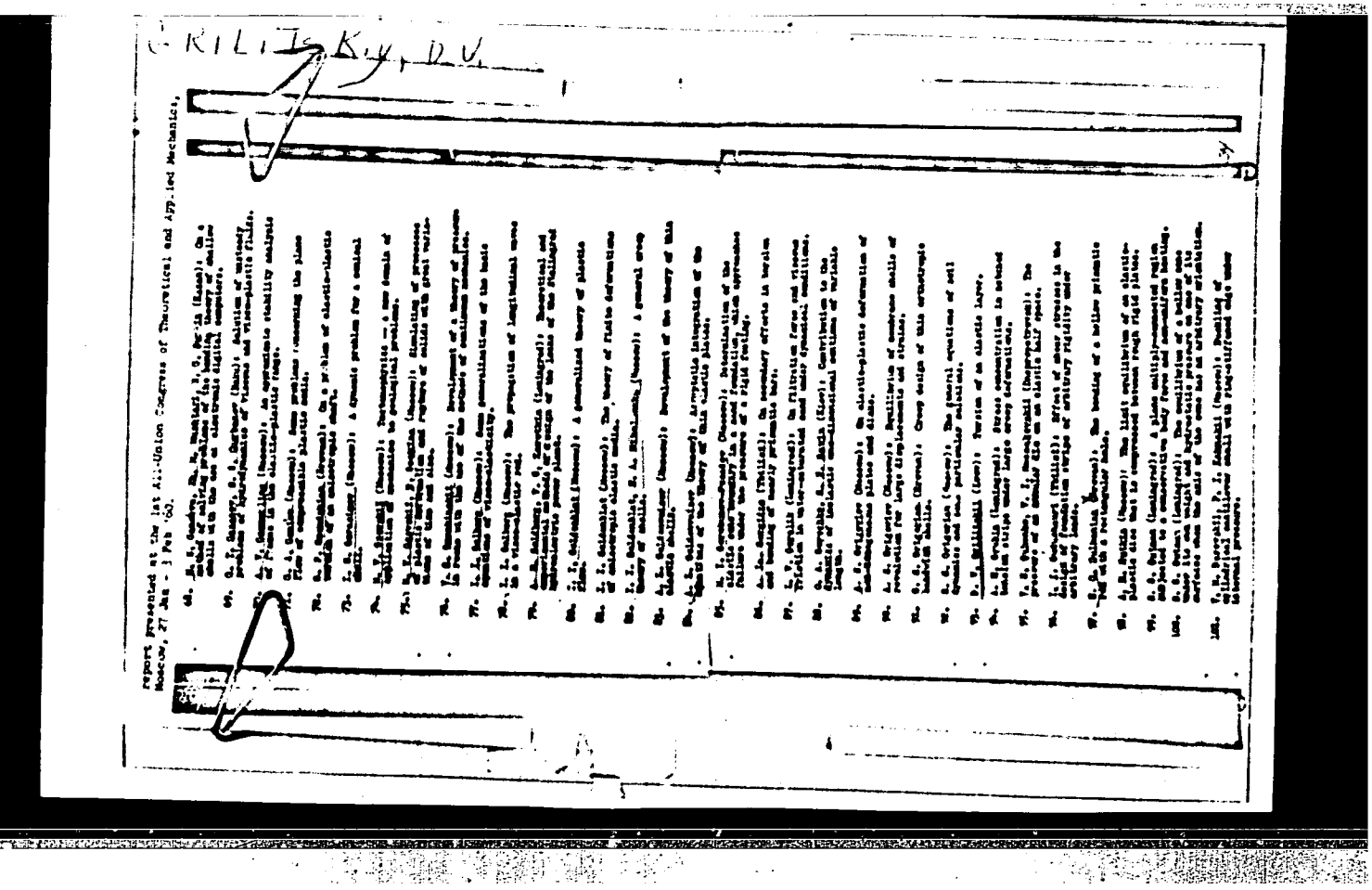
Card 1/1

1. Shafts--Torsion 2. Shafts--Deformation 3. Bodies of revolution--Mathematical analysis

G.N.Savin

SHEREMET'YEV, M.P. [Sheremet'iev, M.P.]; GRILITSKIY, D.V. [Hrylyts'kyi, D.V.]

"Anisotropic plates" by S.G. Lekhnitskii. Reviewed by M.P. Sheremet'ev, D.V. Hrylyts'kyi. Prykl. mekh. 4 no.4:471-472 '58. (MIRA 11:12)
(Elastic plates and shells)



SHEREMET'YEV, M.P.; GRILITSKIY, D.V. [Hrylyts'kyi, D.V.]

Elastic equilibrium of a flat rectangular plate. Prykl.mekh. 6 no.1:109-113 '60. (MIRA 13:6)

1. L'vovskiy gosudarstvennyy universitet.
(Elastic plates and shells)

GRILITSKIY, D.V. [Hrylyts'kyi, D.V.]

Elastic equilibrium of an infinite anisotropic plate with a soldered absolutely rigid elliptical core under a force and a moment applied at an arbitrary point on the plate. Dop.AN URSR no.2:164-167 '60. (MIRA 13:6)

1. L'vovskiy gosudarstvennyy universitet im.Iv.Franko. Predstavleno akademikom AN USSR G.N. Savinym [H.N.Savinym].
(Elastic plates and shells)

GLILITSKIY, D.V. [Hrylits'kiy, D.V.]

Some cases of elastic equilibrium of an isotropic plate with a soldered circular isotropic core. Dop. AN URSR no.4:451-454 '61. (MIRA 14:6)

1. L'vovskiy gosudarstvennyy universitet. Predstavleno akademikom AN USSR G. N. Savinym.

(Elastic plates and shells)

GALITSKIY, D.V. [Halyts'kyi, D.V.] (L'vov)

Torsion of a two-layer elastic cylinder. Prykl. mekh. 7 no. 1:89-95 '61. (MIRA 14:2)

1. L'vovskiy gosudarstvennyy universitet.
(Torsion)

GRILITSKIY, D.V. [Hrylyts'kyi, D.V.]; KIZYMA, Ya.M.

Pressure of a die on a transverse-isotropic layer. Dop. AN URSR no.1:26-30 '62. (MIRA 15:2)

1. L'vovskiy gosudarstvennyy universitet. Predstavleno akademikom AN USSR G.N. Savinym [Savin, H.M.]
(Dies(Metalworking))

GRILITSKIY, D. V.[Hrylits'kyi, D. V.] (L'vov)

Problem of the pressure of a rigid washer on a circular hole in an orthotropic plate. Prykl. mekh. 9 no.3:299-307 '63. (MIRA 16:4)

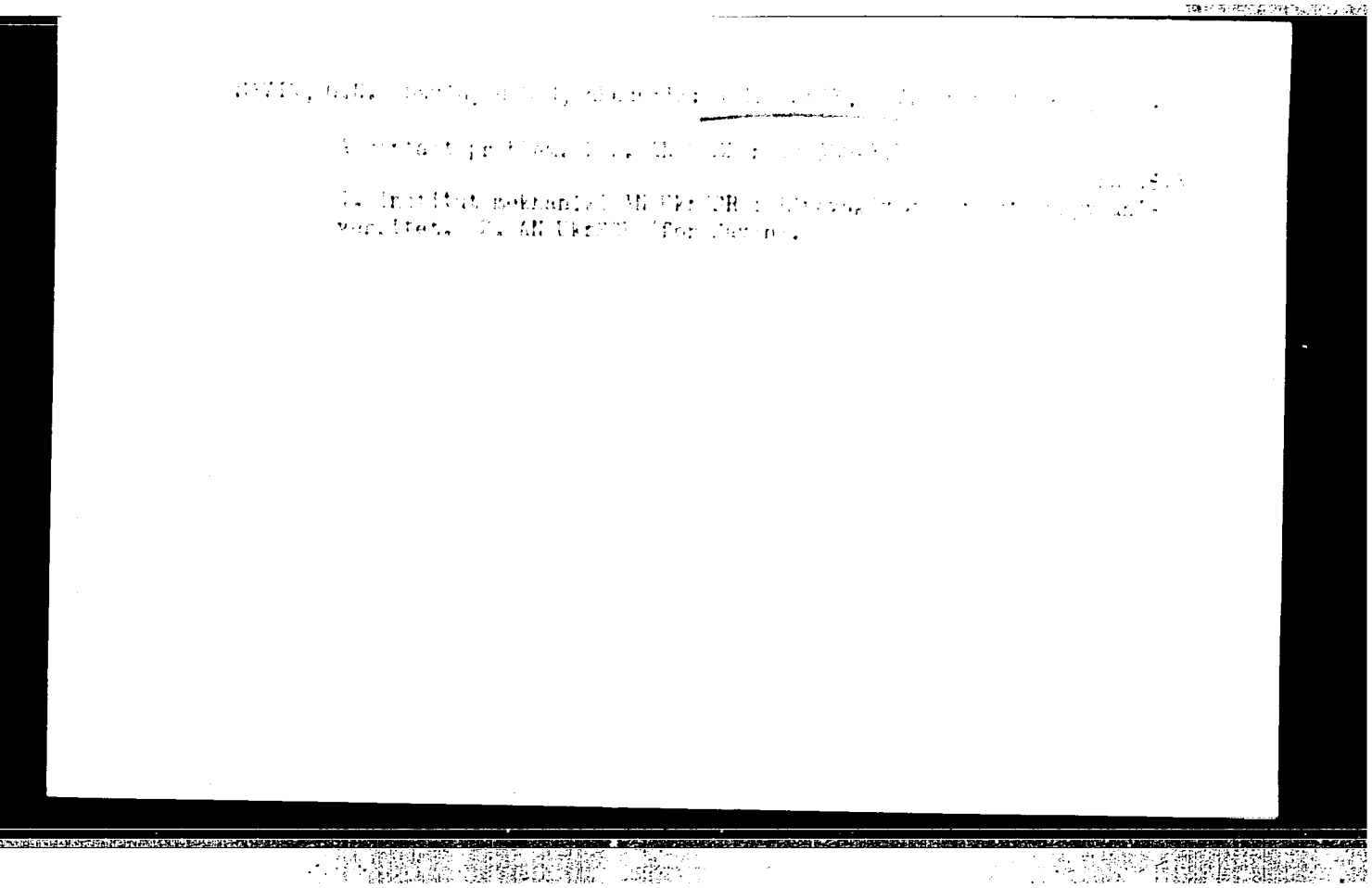
1. L'vovskiy gosudarstvennyy universitet.

(Elastic plates and shells)

KIZIMA, Ya.M. [Kizyma, IA.M.] (L'vov); GRILITSKIY, D.V. [Hrylits'kyi, D.V.] (L'vov)

Axisymmetric problem on the pressure of a flat circular stamp on an elastic semispace in the presence of cohesion. Prykl. mekh. 10 no.3:297-304 '64. (MIRA 17:6)

1. L'vovskiy gosudarstvennyy universitet.



L 33549-65 EPR/EWT(m)/EWP(w) EM

ACCESSION NR: AP5006984 S/0198/65/001/001/0005/0014

AUTHORS: Savin, G. N. (Kiev, L'vov); Grilitskiy, D. V. (Kiev, L'vov)

TITLE: On determining the stressed state in an anisotropic plate with an elastic core

SOURCE: Prikladnaya mekhanika, vo. 1, no. 1, 1965, 5-14

TOPIC TAGS: plate deflection, anisotropic medium, conjugate function, stress load

[illegible] The problem of elastic equilibrium [illegible] plate with a sealed [illegible] $= f_k(\sigma)$ $(\sigma \in \gamma)$, where [illegible] are constants depending on the elastic properties of the plate and the core material, F_1 and F_2

Card 1/3

are known functions that depend on the load and its location. The above two equations are solved to yield

$$f(\sigma) = \frac{1}{\lambda_2 - \lambda_1}\left\{\frac{\lambda_2}{Q_1^2 - K_1^2}\left[Q_1(F_1 + N_1F_2) - \frac{K_1}{\pi i}\int_\gamma \frac{F_1 + N_1F_2}{t-\sigma}\,dt\right] - \right.$$

$$\left. - \frac{\lambda_1}{Q_2^2 - K_2^2}\left[Q_2(F_1 + N_2F_2) - \frac{K_2}{\pi i}\int_\gamma \frac{F_1 + N_2F_2}{t-\sigma}\,dt\right]\right\},$$

$$\overline{f(\sigma)} = -\frac{1}{\lambda_2 - \lambda_1}\left\{\frac{1}{Q_1^2 - K_1^2}\left[Q_1(F_1 + N_1F_2) - \frac{K_1}{\pi i}\int_\gamma \frac{F_1 + N_1F_2}{t-\sigma}\,dt\right] - \right.$$

$$\left. - \frac{1}{Q_2^2 - K_2^2}\left[Q_2(F_1 + N_2F_2) - \frac{K_2}{\pi i}\int_\gamma \frac{F_1 + N_2F_2}{t-\sigma}\,dt\right]\right\},$$

where N is an arbitrary constant and is a function of a, b, c, d. These equations are then solved for four particular load distributions: concentrated load located on the plate, a moment applied to the plate, concentrated load applied to the core, and a moment applied to the core. Orig. art. has: 34 equations and 4 figures.

ASSOCIATION: Institut mekhaniki AN UkrSSR (Institute of Mechanics, AN UkrSSR); L'vovskiy gosuniversitet im. Ivana Franko (L'vov State University)

L 33549-65

ACCESSION NR: AP5006984

SUBMITTED: 29Apr64 ENCL: 00 SUB CODE: ME,SS

NO REF SOV: 008 OTHER: 002

Card 3/3

L 42991-65 EPR/EWT(d)/EWT(m)/EWA(d)/EWP(w) EM

ACCESSION NR: AP5008353 S/0021/65/000/003/0309/0313

AUTHOR: Savin, H. M. (Savin, G. N.); Hrylits'kyy, D. V. (Grilitskiy, D. V.) 22 21 B

TITLE: A contact problem

SOURCE: AN UkrRSR. Dopovidi, no. 3, 1965, 309-313

TOPIC TAGS: elasticity theory 26, contact stress, stress calculation 26, soldered part

ABSTRACT: The problem of determining the contact stresses along the contact line of a soldered-in circular disc 26 made from a different isotropic material than the plate into which it is soldered is considered. In this case, there are slits free of stress at the boundary of the two media. The concentrated force or moment is applied at an arbitrary point on the plate of the disc. The problem is reduced to the solution of a singular integral equation. An example with a plate weakened by one slit along the solder line is considered in detail, the force being applied at the center of the disc. For the case when the slit extends to the circumference, the curves of contact stresses were constructed for three values of the parameter $n = \mu_1/\mu_2$: 0, 1, ∞, where μ_1 and μ_2 are shear moduli for the disc and the plate, respectively. Orig. art. has: 3 figures and 24 formulas.

Card 1/2

L 42991-65

ACCESSION NR: AP5008353

ASSOCIATION: L'vivskyy derzhavnyy universytet (L'vov State university); Instytut mekhaniky AN URSR (Institute of mechanics, AN URSR)

SUBMITTED: 21Mar64 ENCL: 00 SUB CODE: AS

NO REF SOV: 003 OTHER: 000

Card 2/2 nlb

Grillot, Edmond D

Inorganic crystalline substances showing infrared luminescence. Edmond Grillot. *Acta Phys. Acad. Sci. Hung.* 5, 445-61(1956)(in French).—A scheme is proposed which represents precisely the exciton mechanism of the luminescence and photocond. of Cu_2O and which explains the anomalous relaxation time. The red and infrared emission of Ag-activated CdS and the infrared emission of Cu-activated CdS were also studied. In the latter case 2 types of emission centers were found by varying the Cu concn. A similar situation exists for CdSe and mixed sulfides of Cd and Hg activated with Cu. On comparing the 3 corresponding emission centers in ZnS and CdS it is seen that the energy gap between the valence band and the level of a given center is characteristic of the nature of the latter. The observation permits the definite rejection in this case of the theory of the interstitial atom emission center.

E. M. Loebl

Phys Chem

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24(7)

AUTHORS: Grillot, E., Bancie - Grillot, M. SOV/48-22-11-17/33

TITLE: Fluorescence of Pure Cadmium Sulfide at Low Temperatures (Fluorestsentsiya chistogo sernistogo kadmiya pri nizkikh temperaturakh)

PERIODICAL: Izvestiya Akademii nauk SSSR, Seriya fizicheskaya, 1958, Vol 22, Nr 11, pp 1356-1364 (USSR)

ABSTRACT: This paper gives an account of the investigations of six different samples of highly pure CdS, which were produced by different methods. Investigations of the green fluorescence of the first 5 samples at low temperatures, which are distinctive of CdS crystals, provide a means of deciding upon the question to what degree the green luminescence can be ascribed to a mechanism either localizable in the lattice or not. The following luminescent properties were found to undergo considerable modifications dependent upon the method of production and the age of the crystals: 1) The nature of the resolution of the structure of the band maxima, their number and relative intensity. 2) The luminescence yield. 3) The position of the structure maxima, which can be composed of two series. These

Card 1/4

series can also be observed alone. In some crystals both are existing. The existence of two maxima series (Fig 5), with a spacing of about 500 cm^{-1}, gives rise to the assumption that there exist two types of luminescence centers. Hence it can also be assumed that two types of lattice defects are present which are connected with the crystal lattice vibrations. The energy levels of these defects emerge from the upper edge of the valence band only at temperatures below 100°K. Sample Nr 6 showed no noticeable fluorescence, just as did the other samples. Yet, it did not show any green fluorescence when cooled to 77°K. Only when it was cooled to 20°K these crystals began to fluoresce, the radiation in this case, however, differing markedly from that found with the first five samples. The green fluorescence band becomes visible, it is, however, very weak. On the contrary, an intensive blue fluorescence was found. It is composed of individual lines, 7 of which are clearly distinguishable. The microgram (Fig 6) clearly exhibits this difference. Instead of equally spaced bands a spectrum with pronounced maxima is found which is similar to an atomic spectrum. The hypothesis advancing

an exciton mechanism which was dismissed in the consideration of green luminescence, can, with reservation, be applied to explain the blue luminescence. A coincidence of some fluorescence lines with absorption lines may render a limited confirmation of this hypothesis. The peculiar type of fluorescence of sample Nr 6 which was produced by means of a special sublimation at a high temperature gradient, actually provides evidence in favor of an exciton mechanism. The exciton, the existence of which has hitherto been established experimentally with certainty only in light absorption, can evidently also appear in fluorescence. For these two manifestations of the exciton there are indeed required differing conditions. The generation of an exciton by light absorption is to a certain degree dependent upon crystal lattice defects. The annihilation of the exciton with fluorescence emission is, on the contrary, quite an exceptional phenomenon. Fluorescence can be observed only in such crystals, which exhibit an extremely low lattice defect concentration. There are 7 figures and 17 references, 1 of which is Soviet.

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26.1512

AUTHORS: Bancie-Grillot, M., Ye.F. Gross, E. Grillot and Razbirin, B.S.

TITLE: The Effect of Temperature on Two Series of Bands in the Green Fluorescence Spectrum of Pure Cadmium Sulphide at Low Temperatures

PERIODICAL: Optika i spektroskopiya, 1960, Vol 9, No 4, pp 542-544

TEXT: Very pure cadmium sulphide, which does not luminesce at room temperature, exhibits intense green fluorescence at the temperature of liquid air (Refs 1-3). The spectrum consists of two vibrational series whose maxima are given by $\nu_1 = 19\,450 - 300n$ cm^{-1} and $\nu_2 = 19\,310 - 300p$ cm^{-1}, where n and p are small integers. The present paper reports further studies on the effect of temperature on the relative intensities of the two series, between 4 and 77 °K. In some crystals only the second series (ν_2) was observed at 4 °K; heating of these crystals to the boiling point of liquid nitrogen destroyed gradually this series, which was (also gradually) replaced by the first series at 77 °K. If a crystal exhibited only the first series at 4 °K, then

Card 1/2

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The Effect of Temperature on Two Series of Bands in the Green Fluorescence Spectrum of Pure Cadmium Sulphide at Low Temperatures

heating to 77 °K did not produce the second series. In crystals with both series at 4 °K heating to 77 °K weakened the bands of the second series so that only the first series (slightly broadened) remained at 77 °K, as shown in Fig 1. On application of an electric field (about 1 kV/cm) to a crystal immersed in liquid helium and exhibiting both series, the intensity of the first series bands was raised and the intensity of the second series was lowered, as shown in Fig 2. Further studies of the effects of electric fields are proceeding. Acknowledgement is made to N.M. Reynov for his help in work with liquid helium. There are 2 figures and 4 references: 1 Dutch, 1 French and 2 mixed (English, German, Dutch, Russian and French).

SUBMITTED: May 3, 1960

Card 2/2