

SOV/136-59-11-13/26

Extrusion of Thin-Walled Aluminium Sheaths

materials. Tubes were extruded and bare copper conductors, as well as cables insulated with fibre, were sheathed. The rate of metal flow in the extrusion of tubes was 25 to 30 m/min, and in sheathing 5 to 15 m/min at a pressure of 60 to 70 kg/mm². The sheath dimensions obtained are shown in Table 2. The sheath wall thicknesses along the length of conductors are shown in Fig.3. There are 3 figures, 2 tables and 7 references, of which 6 are Soviet and 1 English.

Card 3/3

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EDEL'MAN, Aleksandr Samoylovich, inzh.; FRIDMAN, Aron Solomonovich, inzh.;
BRANDENBURGSKAYA, E.Ya., red.; BORUNOV, N.I., tekhn.red.

[Aluminum in the production of cables] Aluminii v kabel'noi
tekhnike. Moskva, Gos.energ.isd-vo, 1960. 95 p. (MIRA 13:6)
(Aluminum) (Electric cables)

Abstract

Microhardness of silicon and germanium

Microhardness of silicon and germanium is measured

at room temperature

and

The anisotropic microhardness of the (100) and (111) surfaces of silicon and germanium is measured at room temperature. The microhardness of silicon is found to be higher than that of germanium. The microhardness of silicon is also found to be higher than that of germanium.

14-00000-58

REF ID: A65097843

... formulas and 1 table

... ..

... ..

L-64792-65 EPP(c)/EWT(L)/EWT(m)/EWA(h)/EWP(b)/E/EWP(t) IJP(c) GG/AT/JD

ACCESSION NR: AP5018728 UR/0070/65/010/004/0567/0567

Author: ^{H.S.} Khayrovskaya, I.Ye. 42

TITLE: Etching of gallium arsenide and indium antimonide with iodine

SOURCE: Kristallografiya, v. 10, no. 4, 1966, 567

TOPIC TAGS: gallium arsenide, indium compound, etched crystal, crystal dislocation, iodine, iodide, semiconductor crystal

ABSTRACT: Etching of semiconductor crystals with iodine vapor has been applied to III-V semiconductors whose composition varies with the crystal type. This method coupled with fast etching rates yields high contrast etch marks. The etching rate varies with the crystal type and the etching temperature. The etching rate increases with increasing temperature and with increasing iodine concentration.

L 64792-65

ACCESSION NR: AP5018728

4

ing region was 400C for GaAs and 250C for InSb. The rate of supply of iodine vapor was controlled by means of a stream of helium gas by means of a diaphragm. The plastic deformation was carried out at a rate of 10⁻³ sec⁻¹. The relationship between the plastic deformation and the rate of supply of iodine vapor is discussed.

ASSOCIATION: Institut fiziki tverdogo tela i poluprovodnikovoy elektroniki (Institute of Solid State Physics and Electronics)

19 Aug 64

ENCL: 00

REF: 100

OTHER: 11

KHAYNOVSKAYA, V.V.; EDEL'MAN, F.L.

Pickling of gallium arsenide. Izv. SO AN SSSR no. 3 Ser. khim.
nauk no. 1:125-128 '65. (MIRA 18:8)

1. Institut fiziki tverdogo tela i polyprovodnikov elektroniki
Sibirskogo otdeleniya AN SSSR, Novosibirsk.

L 18869-66 EWI(m)/EWP(t)/ IJI(c) JD
ACC NR: AP6008067 SOURCE CODE: UR/0032/66/032/002/0214/0215
AUTHOR: Givel'berg, G. Ye.; Edel'man, F. L.; Muravskiy, B. M.
ORG: Institute of semiconductor physics of the Siberian Branch of the Academy of Sciences SSSR (Institut fiziki poluprovodnikov Sibirskogo otdeleniya Akademii nauk SSSR) 43
TITLE: A simple method of preparing silicon samples B
SOURCE: Zavodskaya laboratoriya, v. 32, no. 2, 1966, 214-215
TOPIC TAGS: semiconductor crystal, silicon diode
ABSTRACT: The authors describe a method for preparing simultaneously a great number of samples from crystals used in mass production of high-frequency silicon diodes. A crystal plate of a 2-mm diameter and 0.3 to 0.2 mm thick was held in a special clamp made of teflon. The arrangement of the clamping device was schematically illustrated. One or both sides could be etched by immersion into a mixture (1:3:3) of hydrofluoric, nitric and acetic acids. The duration of treatment was about 1 hr and 30 min. A surface conductance for 75-kev electrons was obtained.
SUB CODE: 20 / SUBM DATE: None / ORIG REF: 001 / OTH REF: 000

Card 1/1 10

S/123/59/000/008/016/043
A004/A002

Translation from: Referativnyy zhurnal, Mashinostroyeniye, 1959, No. 8, p. 68,
29051

AUTHOR: Edel'man, F. L.

TITLE: Liquid Stamping¹⁶

PERIODICAL: Za tekhn. progress. Byul. Novosib. sovnarkhoza i oblsoprofa,
1958, Nos. 4-5, pp. 14-16

TEXT: Bibliographic entry



Card 1/1

18.1151

4016 1418 1416 1413

S/148/61/000/002/011/011
A161/A133AUTHORS: Edel'man, F. L., Tushinskiy, L. I.

TITLE: An investigation of iron-aluminum alloys

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Chernaya metallurgiya, no. 2,
1961, 128 - 132

TEXT: Nonoxidizing high-temperature alloys used at present are high-alloy steel and special alloys (with Ni, Mo, Co or other base), or low and medium-alloy steel and cast iron (mostly with Cr, Ni, Si, etc) that are oxidation-proof at 800 - 900°C. The described investigation of low-carbon Fe-Al alloys has been conducted for the reason that this is the cheapest element combination that is oxidation-resistant at 800 - 1,100°C. The alloys were prepared by mixing molten low-carbon iron with 2.49 to 29.36% Al. The initial materials were: aluminum with 0.00% Si, 0.002% Cu, and 0.17% Fe, and iron with 0.08% C, 0.15% Mn, 0.22% Si, 0.024% S, 0.018% P and 0.05% Cr. The iron was melted in an acid induction furnace with fluid slag (glass scrap); 0.15% (weight per cent) Al, was added towards the end of the melting. The Iron temperature measured during pouring was 1,500 - 1,530 °C. The average weight of a melt was 1 kg. Aluminum was melted in a crucible,

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S/148/61/000/002/011/011

A161/A133

An investigation of iron-aluminum alloys

overheated to 750°C, and mixed with iron poured into the crucible using a steel rod. All specimens with below 16.11% Al had coarse disoriented crystals and 1 mm deep finely grained skin. Alloys with 16.11 - 29.36% Al had a zone of acicular crystals reaching from the fine-grained skin to the axis of the ingots, and the ingots broke from relatively slight blows. The microstructure was examined in cast specimens annealed at 1,000°C for 5 h. It was a monophasic solid solution in metal with up to 10.6% Al, and biphasic structure in metal with more Al, with the lamellar second phase on the background of a light polyhedral component (β). The lamellas were often on the boundaries of solid solution grains, and the size of lamellas was different. They were largest in alloys with 16.11 - 29.36% Al. The lamellas coagulated after 5 h annealing. The microhardness of the largest lamellas was lower than that of the base, and the difference was largest in metal with 29.36% Al. The hardness was different in different spots. The highest hardness was obtained in alloys with 22.37% Al; 5 h annealing at 1,000°C reduced the hardness by 30 - 70 Brinell units in all compositions. The machinability was estimated by drilling and corresponded to the hardness. Comparing to four annealed steel grades, most of the tested alloys except for the composition with 29.36% Al were better machinable than the heat-resistant 2X13 (2Kh13) steel. The high-temperature oxidation resistance was tested in an oxidizing atmosphere of a furnace and

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С 1030

S/148/61/000/002/011/011

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An investigation of iron-aluminum alloys

measured with analytic scales. The scale on alloys with below 10.60% Al was black, porous and easily separating, but on other alloys it was very dense, pink, and stuck to the surface. In the open air the pink film rapidly covered with a loose white matter (apparently aluminum hydroxide). The resistance to scaling at 1,000°C was somewhat higher on specimens with the cast skin left on than on specimens of same metal composition after turning. The Fe-Al alloys with above 18.4% Al had higher heat resistance than 1Kh13 steel and several times higher than the silicon and aluminum cast iron heat resistance indicated in some publications. [Essentially full translation]. There are 5 figures, 1 table and 5 Soviet-bloc references.

ASSOCIATION: Novosibirskiy elektrotekhnicheskiy institut (Novosibirsk Electro-technical Institute)

SUBMITTED: May 4, 1960

Card 3/3

32662

S/126/61/012/005/026/028
EO40/E435

18 8306

AUTHORS: Edel'man, F.L., Pokrovskiy, V.V., Tushinskiy, L.I.,
Dautova, A.I.

TITLE: Superstructure and anomalous corrosion resistance

PERIODICAL: Fizika metallov i metallovedeniye, v.12, no.5, 1961,
778-779

TEXT: The anomalous drop in the corrosion resistance of ferroaluminium alloys in the temperature interval of 550 to 580°C was investigated on cast ferroaluminium specimens containing 2.49 to 29.36% Al and impurities of C, Si, Mn, S and P in the total quantity of less than 0.5 to 0.8%. The specimens were dissolved in molten O-1 grade tin at various temperatures (up to 1200°C) and the quantity of the dissolved ferroaluminium alloys was determined at the various test temperatures. All specimens were annealed before tests. The data obtained are shown graphically. It was found that a sharp deterioration in the corrosion resistance of ferroaluminium alloys corresponds to the temperature intervals of 500 to 600°C and 1000 to 1200°C. The absolute solubility of the test specimens with various aluminium contents is of the same order for all alloys with the exception of
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32662

S/126/61/012/005/026/028

EO40/E435

Superstructure and anomalous ...

those containing 16.11% Al and 25.76% Al. Alloy steels 1X13 (1Kh13), 1X18~~4~~9 (1Kh18N9) and 1X18~~4~~9T (1Kh18N9T), titanium and nickel tested under identical conditions had a lower corrosion resistance than the ferroaluminium alloys. Nickel was found to dissolve completely in tin at 550°C. An attempt is made to interpret the test data in terms of the previously reported concept of superstructure (Ref.1: Bradley A.I. et al. J. Iron and Steel Institute, v.125, 1932, 339; Ref.2: Sykes C. et al. J. Iron and Steel Inst., v.131, 1935, 225; Ref.3: Bradley A.I. et al. J. Iron and Steel Inst., v.141, 1940, 63) which affects the corrosion resistance properties of ferroaluminium alloys in the temperature interval of the order-disorder transformation (550 to 580°C) and arises in consequence of the disappearance of domain structure of ordered alloys and the development of lattice defects and their diffusion in crystals. The most probable cause of the observed reduction in the corrosion resistance of the alloys is the appearance of lattice defects at the instant when disorder sets in, which leads to a weakening of the interatomic bond forces. There are 1 figure and 6 references: 3 Soviet-bloc and 3 non-Soviet-bloc. The three references to English language publications are quoted in

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32662

Superstructure and anomalous ...

S/126/61/012/005/026/028
E040/E435

the text.

ASSOCIATION: Novosibirskiy elektrotekhnicheskiy institut
(Novosibirsk Electrotechnical Institute)

SUBMITTED: March 13, 1961

X

Card 3/3

EDEL'MAN, F.L.; TUSHINSKIY, L.I.

Investigation of iron-aluminum alloys. Izv. vys. ucheb. zav.; chern.
met. no.2:128-132 '61. (MIRA 14:11)

1. Novosibirskiy elektrotekhnicheskiy institut.
(Iron-aluminum alloys)

35920
S/148/62/000/002/007/008
E073/E535

18.11.5

AUTHORS: Edel'man, F.L., Pokrovskiy, V.V., Tushinskiy, L.I.
and Dautova, A.I.

TITLE: Stability of alloy steels in molten tin

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Chernaya
metallurgiya, no.2, 1962, 123-124

TEXT: The aim of the work was to determine the stability of various metals and alloys in molten tin at temperatures above 500°C. Specimens made of alloy steels of standard composition, of pure metals (titanium, tantalum and nickel) and of iron-aluminium alloys containing 2.49, 16.11, 18.44, 21.62, 25.76 and 29.36% aluminium, rest Fe were immersed for two hours in molten tin at temperatures between 400 and 1250°C. The degree of dissolution of the metal in the tin was determined by calculation from the difference between the initial and the final contents of the particular material in the tin. Titanium and tantalum proved resistant against dissolution in tin but became brittle at 600°C and above; therefore, they are unsuitable as structural materials under the given conditions. At temperatures up to 1000°C, the
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X

Stability of alloy steels in ... S/148/62/000/002/007/008
E073/E535

steel IX18HQT(1Kh18N9T) was the most resistant against dissolution and iron-aluminium alloys showed a satisfactory resistance. Above 1000°C, the aluminium alloys containing 16.11, 25.76 and 29.36% Al were more resistant than stainless steel. In view of their cheapness and good technological properties, iron-aluminium alloys are recommended as substitutes for stainless steel in the manufacture of apparatus intended to operate in contact with molten tin. There is 1 table.

ASSOCIATION: Novosibirskiy elektrotekhnicheskiy institut
(Novosibirsk Electro-technical Institute)

SUBMITTED: March 14, 1961

Card 8/8

EDEL'MAN, F.L.; POKROVSKIY, V.V.; TUSHINSKIY, L.I.; DAUTOVA, A.I.

Superstructure and the anomalies of corrosion resistance.
Fiz. met. i metalloved. 12 no.5:778-779 N '61.

(MIRA 14:12)

1. Novosibirskiy elektrotekhnicheskiy institut.
(Iron-aluminum alloys--Corrosion)
(Crystal lattices)

EDEL'MAN, F.L.; TUSHINSKIY, L.I.

Substructure and shear in the structure of cast alloys. *Izv.vys.*
ucheb.zav.; chern.met. 5 no.6:100-102 '62. (MIRA 15:7)

1. Novosibirskiy elektrotekhnicheskiy institut.
(Alloys—Metallography)

S/148/62/000/008/004/009
EO71/E435

AUTHORS: Edel'man, F.L., Tushinskiy, L.I.

TITLE: Resistance of iron-aluminium alloys to scale formation

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Chernaya metallurgiya, no.8, 1962, 119-127

TEXT: The investigation was carried out in order to obtain data on the resistance to the formation of scale for a large group of iron-aluminium alloys containing various amounts of carbon (0.05 to 0.45), aluminium (10.6 to 31.2) and silicon (0.03 to 0.52). Some of the alloys were modified with calcium. The method of preparation of the alloys and specimens as well as the method of testing were described in an earlier paper. The specimens were retained in a furnace at 800 and 1000°C for 1, 2, 5, 10, 25, 50 and 100 hours and at 1100°C for 1, 2, 5 and 10 hours. In addition some data on the initial stages of oxidation of the alloys at 1000°C were obtained. Depending on the temperature of oxidation there are various optimal compositions of iron-aluminium alloys.

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Resistance of iron-aluminium ... S/148/62/000/008/004/009
E071/E435

	Optimum content of Al in alloy, %	Resistance to scaling at a temperature, °C
not less than	15 - 16	up to 800
not less than	18 - 22	800 - 1000
not less than	22 - 25	1000 - 1100

The mechanism of oxidation of the alloy is similar to that of iron-chromium-aluminium alloys, i.e. in the first stage simultaneous oxidation of iron and aluminium takes place with the formation of an oxide film, probably of the spinel type. On further retention or with increasing temperature, the process of aluminothermal reduction of iron oxides in the film takes place. The composition of the film approaches that of aluminium oxide. All iron-aluminium alloys with an optimal or higher aluminium content for the given temperature had a dense, non-scaling oxide
Card 2/3

Resistance of iron-aluminium ...

S/148/62/000/008/004/009
E071/E435

film. Conclusion: iron-aluminium alloys in the cast state have a high resistance to scaling, comparable with that of a number of highly alloyed steels and alloys. The protective oxide film is dense and thin. The best resistance to scaling can be obtained in low carbon alloys (less than 0.1% C and 17 to 22% of Al), modified with 0.1 to 0.2% of calcium. The parabolic law is applicable to high temperature (above 800°C) oxidation of iron-aluminium alloys on the basis of which the main constants of the oxidation process can be calculated. There are 7 figures and 3 tables.

ASSOCIATION: Novosibirskiy elektrotekhnicheskiy institut
(Novosibirsk Electrotechnical Institute)

SUBMITTED: July 7, 1961

Card 3/3

EDEL'MAN, F.L.; TUSHINSKIY, L.I.

Scale resistance of iron-aluminum alloys. Izv. vys. ucheb. zav.;
chern. met. 5 no.8:119-127 '62. (MIRA 15:9)

1. Novosibirskiy elektrotekhnicheskiy institut.
(Iron-aluminum alloys--Corrosion)

ACCESSION NR: AP4017762

S/0148/64/000/002/0131/0139

AUTHOR: Edel'man, F. L.; Tushinskiy, L. I.

TITLE: The structure of Fe-Al alloys

Vol # 7

SOURCE: IVUZ. Chernaya metallurgiya, no. 2, 1964, 131-139

TOPIC TAGS: iron aluminum alloy, alloy structure, macrostructure, microstructure, annealing, K-phase, alpha solid solution, ferrite, graphite, silicon, calcium, iron, aluminum, heat treatment

ABSTRACT: Little is known about the effect of different compositions of Fe-Al alloys on their macrostructures. Therefore, the authors investigated 200-300 g specimens of the following group of Fe-Al alloys: (1) with a low content of additives and a variable Al content; (2) with a variable C and Al content; (3) with a variable Si and Al content; and (4) CaSi-inoculated alloys. Maximum brittleness occurred in group (3). Increased additions of Al and C lead to intensive graphitizing in all groups, and 0.1 to 0.2% Ca refined grain size and caused the formation of equi-axial crystals. Hot ductility was

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ACCESSION NR: AP4017762

found to have increased with tensile strength reaching 51 kg/mm² at a 10% elongation per unit length. The microstructure of the specimens was basically composed of Al in Fe alpha-solid solution, with negligible quantities of C and a K-phase. In the light of the current controversy over the effect of the K-phase on mechanical and physical properties, the authors investigated the action of heat treatment on the microstructure of the alloys. Cast specimens were annealed at 1000 C for 100 hours. Hardness was highest in group (2), reaching 395-615 Brinell Hardness (HB) for the alpha-phase and 615-755 for the K-phase. Carbon alloys were appreciably affected and it was found that the quantity and the size of the K-precipitants increased, and the hardness of the alpha-solution decreased by 10-40% and by only 5 to 15% for the K-phase. Carbide hardness amounted to 703-858 Brinell Hardness (HB). In group (3), annealing decreased the number and size of the K-phase grains and carbides. Group (4) displayed less carbide, and with 17-22% Al, numerous lamellar K-phase grains and a carbide phase appeared. All inoculated annealed specimens displayed a lower alpha-phase hardness and a higher K-phase hardness. The authors

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ACCESSION NR: AP4017762

contend that the K-phase is a stabilized superstructure (Fe_3Al) with a C content within the 0.01 to 4% range inasmuch as the C content does not affect the quantity of the K-phase while microhardness is affected by composition. The authors recommend a maximum C content of 4.4% in the K-phase which corresponds to the formula of the $(Fe_3Al)_4C_3$ compound. Orig. art. has: 5 figures, 3 tables and 2 equations.

ASSOCIATION: Novosibirskiy elektrotekhnicheskiy institut (Novosibirsk Electrical Engineering Institute)

SUBMITTED: 31Jul63

DATE ACQ: 12Mar64

ENCL: 00

SUB CODE: ML

NO REF SOV: 010

OTHER: 000

с. 3/3

EDEL'MAN, I.L.; BARABASH, M.L.; ZAYCHENKO, A.L.

Use of a horizontal optimeter in determining the wear of polymer coatings. Zav. lab. 30 no.10:1283-1284 '64. (MIRA 18:4)

1. Kiyevskiy avtomobil'no-dorozhnyy institut.

4 23643-65

EMP(m)/EMP(g)/EMP(v)/EPR/EMP(j)/E/EMP(t)/EMP(s)

PE-1, PE-2, PE-3

L 23613-65

COMMUN NR: AP6002832

... amount of plasticizer. Addition of graphite decreased the adhesion generally but not significantly. The efficiency of fillers with respect to adhesion decreased in the order: ... and graphite. Films of identical composition (with

1985-05-15 (S) / (S) / (S) / (S) / (S)

1985-05-15 (S) / (S) / (S) / (S) / (S)

1985-05-15 (S) / (S) / (S) / (S) / (S)

1985-05-15 (S) / (S) / (S) / (S) / (S)

USSR. Sibirskoye otdeleniye. Izvestiya. Seriya Khimiya i Fizika.

1985-05-15 (S) / (S) / (S) / (S) / (S)

The etching of single-crystal n-type GaAs with various compositions $H_2O:HNO_3 = 2:1$ and $H_2O:HNO_3 = 1:1$ at $100^\circ C$ and $150^\circ C$ showed a clearly defined etching pattern. The etching patterns

L 58968-65

ACCESSION NR: AP5017062

... purely dislocational pattern in the ...

... N. ...

SOV 602

OTHER: 605

KLYMCHENBERG, Sergey Yevgen'yevich; TSALKIN, V.I., doktor biologicheskikh nauk, redaktor; MDML'MAN, G.N., redaktor; MAKUNI, Ye.V., tekhnicheskij redaktor.

[Mammals of the Black Sea and the Sea of Azov; results of a biological commercial study] Mlekopitaiushchie Chernogo i Azovskogo morei; opyt biologe-promyslovoego issledovaniia. Moskva, Izd-vo Akademii nauk SSSR, 1956. 285 p. (MLRA 9:6)
(Black Sea--Mammals) (Azov, Sea of--Mammals)

KIDEL'MAN, I.

Disseminating new and progressive methods. Stroitel' no.1:18-19
Ja '58. (MIRA 11:2)
(Ufa--Building trades--Study and teaching)

EDELMAN, I.

Pioneers of the future. Stroitel' no.8:15-18 Ag '60.
(MIRA 13:8)
(Building)

... BOMBASH, M.L.; GUCYATSKAYA, Ye.P.

Permeability and water and oil absorption of polymeric films with
nonly dispersive fillers. Plast.massy no.9:59-61 '64.

(MIRA 17:10)

EDEL'MAN, I.I.

Handwritten mark

21

A rapid method of determining the softening point of pitch residues from the still. I. I. Edel'man. *Coke and Chem. (U. S. S. R.)* 1933, No. 10, 707-2. The special apparatus consists of (1) a metallic threaded bolt (diam 10, length 18 mm.), (2) a metallic plate (length 75, width 35, thickness 5 mm.) with a threaded opening in the middle for the bolt and (3) a metallic ring (outside diam. 32, inside diam. 28, length 6 mm.) with a wire (100 mm.) extending from one end of the ring; the inside of the ring is threaded also. The bolt is screwed into the plate, the ring placed over it so as to form an annular mold, the hot pitch residue poured in and allowed to solidify. The plate is unscrewed and the ring with pitch and bolt suspended by means of wire in a beaker of hot water. This beaker is immersed in an out-leaker of boiling H₂O. By means of a stop watch the time is recorded from the moment of immersing the ring to the moment when the bolt touches the bottom of the beaker. The number of seconds corresponds to a certain definite temp. of softening of the pitch. The relation be-

tween the temp. of softening according to the standard method of Krömer and Sarnow, and the time required to soften the pitch in hot water (100°), was detd. experimentally and a table made. The time required for this test is 12-15 min. A. Pestoff

438-55A DETALLURGIKAL LITERATURE CLASSIFICATION

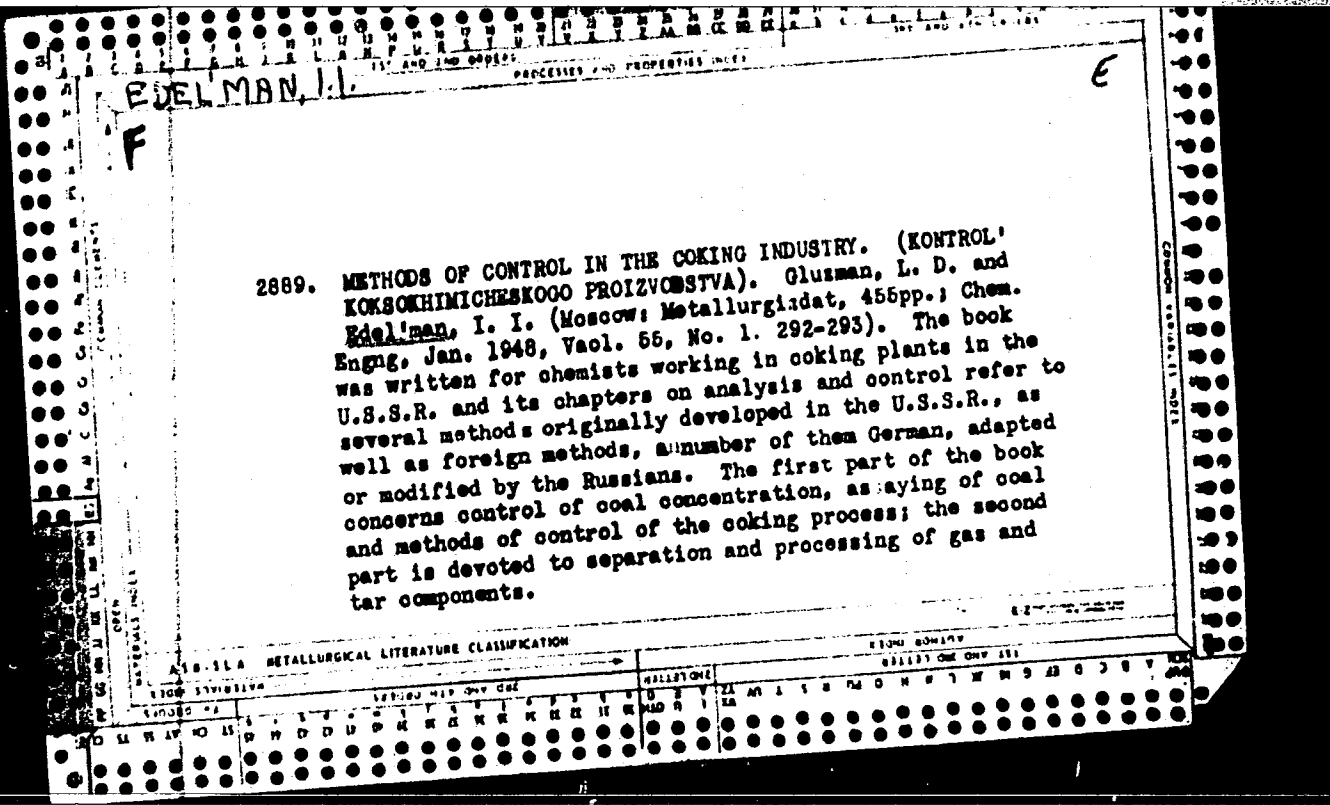
EDELMAN, I. I. 21

ca

Utusman, L. D., and Edel'man, I. I. Methods of Control in the Coking Industry. 3rd ed. (in Russian.) Moscow: Metallurgizdat, 1947. 455 pp. Reviewed in Chem. Eng. 55, No. 1, 202(1948).

ASS-51A METALLURGICAL LITERATURE CLASSIFICATION

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	00
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Is I.
GOLZMAN, Lyubov' Davydovna; ~~EDEL'MAN, Ita Ionifovna~~; FOSS, E.I., otvetstven-
nyy redaktor; SINYAVSKAYA, Ye.K., redaktor izdatel'stva; LIBSGLAD,
S.S., redaktor izdatel'stva; ANDREYEV, S.P., tekhnicheskiy redaktor

[Laboratory control of the by-product coke industry] Laboratornyi
kontrol' koksokhimicheskogo proizvodstva. Izd. 4-oe, perer. i dop.
Khar'kov, Gos.nauchno-tekhn.isd-vo lit-ry po cherno i tsvetnoi
metallurgii, 1957. 635 p. (MLRA 10:10)
(Coke industry)

5(2)

AUTHORS:

Edel'man, I. I., Zabora, L. S.,
Khizhnyak, N. D.

SOV/32-25-2-16/78

TITLE:

The Accelerated Determination of Phosphorus in Coal and Coke
(Uskorennoye opredeleniye fosfora v ugle i kokse)

PERIODICAL:

Zavodskaya Laboratoriya, 1959, Vol 25, Nr 2, pp 159-160 (USSR)

ABSTRACT:

It was tried to replace the time-consuming fusion of the sample necessary in the method suggested by M. Ye. Neymark and I. Ye. Kagan (Ref 1) and introduced by the GOST 1932-54 by a simpler method. For this purpose the method described by Zdenek (Ref 2) was examined, but the final determination was not carried out polarographically but photolorimetrically with molybdenum blue. It was shown that the results obtained with this method of acid fusion are too low, i.e. it seems likely that all of the phosphorus is not extracted. This means that the method is unsatisfactory. Investigations of a second variant, namely the incineration of the sample in the presence of air followed by a digestion in powerful acids furnished satisfactory results (Tables 1,2). The reproducibility is equally good, and the variations of parallel determinations do not exceed the permissible limits. The analysis duration

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. The Accelerated Determination of Phosphorus in
Coal and Coke

SOV/32-25-2-16/78

is 1.5 hours, as compared to 4-6 hours in the case of the standard method. Furthermore, it is no longer necessary to use the "Eshka" mixture which must be used in the standard method. There are 2 tables and 2 references, 1 of which is Soviet.

ASSOCIATION: Ukrainskiy nauchno-issledovatel'skiy uglekhimicheskiy institut
(Ukrainian Scientific Research Institute of Coal Chemistry)

Card 2/2

EDELMAN, I.L., inzh.

Requirements concerning stone spreaders. Avt. dor. 23 no.8:30
Ag '60. (MIRA 13:8)

(Road machinery)

EDEL'MAN, I.L.; BARABASH, M.L.; GLOVATSKAYA, Ye.P.

Adhesion of polymer films with highly dispersed fillers to metals.
Plast. massy no.1:59-61 '65. (MIRA 18:4)

SHIL'MAN, I. I., starchy prepolymeriz., 1978, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 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822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000, 1001, 1002, 1003, 1004, 1005, 1006, 1007, 1008, 1009, 1010, 1011, 1012, 1013, 1014, 1015, 1016, 1017, 1018, 1019, 1020, 1021, 1022, 1023, 1024, 1025, 1026, 1027, 1028, 1029, 1030, 1031, 1032, 1033, 1034, 1035, 1036, 1037, 1038, 1039, 1040, 1041, 1042, 1043, 1044, 1045, 1046, 1047, 1048, 1049, 1050, 1051, 1052, 1053, 1054, 1055, 1056, 1057, 1058, 1059, 1060, 1061, 1062, 1063, 1064, 1065, 1066, 1067, 1068, 1069, 1070, 1071, 1072, 1073, 1074, 1075, 1076, 1077, 1078, 1079, 1080, 1081, 1082, 1083, 1084, 1085, 1086, 1087, 1088, 1089, 1090, 1091, 1092, 1093, 1094, 1095, 1096, 1097, 1098, 1099, 1100, 1101, 1102, 1103, 1104, 1105, 1106, 1107, 1108, 1109, 1110, 1111, 1112, 1113, 1114, 1115, 1116, 1117, 1118, 1119, 1120, 1121, 1122, 1123, 1124, 1125, 1126, 1127, 1128, 1129, 1130, 1131, 1132, 1133, 1134, 1135, 1136, 1137, 1138, 1139, 1140, 1141, 1142, 1143, 1144, 1145, 1146, 1147, 1148, 1149, 1150, 1151, 1152, 1153, 1154, 1155, 1156, 1157, 1158, 1159, 1160, 1161, 1162, 1163, 1164, 1165, 1166, 1167, 1168, 1169, 1170, 1171, 1172, 1173, 1174, 1175, 1176, 1177, 1178, 1179, 1180, 1181, 1182, 1183, 1184, 1185, 1186, 1187, 1188, 1189, 1190, 1191, 1192, 1193, 1194, 1195, 1196, 1197, 1198, 1199, 1200, 1201, 1202, 1203, 1204, 1205, 1206, 1207, 1208, 1209, 1210, 1211, 1212, 1213, 1214, 1215, 1216, 1217, 1218, 1219, 1220, 1221, 1222, 1223, 1224, 1225, 1226, 1227, 1228, 1229, 1230, 1231, 1232, 1233, 1234, 1235, 1236, 1237, 1238, 1239, 1240, 1241, 1242, 1243, 1244, 1245, 1246, 1247, 1248, 1249, 1250, 1251, 1252, 1253, 1254, 1255, 1256, 1257, 1258, 1259, 1260, 1261, 1262, 1263, 1264, 1265, 1266, 1267, 1268, 1269, 1270, 1271, 1272, 1273, 1274, 1275, 1276, 1277, 1278, 1279, 1280, 1281, 1282, 1283, 1284, 1285, 1286, 1287, 1288, 1289, 1290, 1291, 1292, 1293, 1294, 1295, 1296, 1297, 1298, 1299, 1300, 1301, 1302, 1303, 1304, 1305, 1306, 1307, 1308, 1309, 1310, 1311, 1312, 1313, 1314, 1315, 1316, 1317, 1318, 1319, 1320, 1321, 1322, 1323, 1324, 1325, 1326, 1327, 1328, 1329, 1330, 1331, 1332, 1333, 1334, 1335, 1336, 1337, 1338, 133

2 D L 1 177 10 I 177
GOGINA, D.M., inzhener; DEMENT'YEV, B.B., inzhener; KANTOR, D.M., inzhener;
SBITNEV, G.F., inzhener; EDEL'MAN, I.M., inzhener.

Automatic checking device for three-phase electric meters. Vest.
elektroprom. 28 no, 5:55-57 My '57. (MLRA 10:6)

1. Moskovskiy elektromekhanicheskiy zavod.
(Electric meters)

10/11/68 10/11/68 10/11/68 10/11/68 10/11/68 10/11/68 10/11/68 10/11/68 10/11/68 10/11/68

...the form of ...
...fresh ...
...of an external magnetic field. The films produced at temperatures below 250—300C exhibited a single preferred orientation of ... produced at temperatures above ... exhibited ... of the substrate ...
...two equivalent easy magnetization axes at right angles

L 10/31/59

ACCESSION NO. AP404004

ASSOCIATION IN THE USSR (INSTITUTE OF PHYSICS, GO
AN SSSR)

SUBMITTED: 18Dec63

ATD PRESS: 3116

ENCL: 00

1. 1988-85 500(1)/500(2)/500(3)/500(4)/500(5) 500(6)/500(7)/500(8)/500(9)/500(10)

Investigation of the quasistatic magnetic field effect on the Faraday effect

свойства ферромагнитных и металловеденных пленок

1988-85 500(1)/500(2)/500(3)/500(4)/500(5) 500(6)/500(7)/500(8)/500(9)/500(10)

The authors have investigated the quasistatic magnetic field effect on the Faraday effect in the case of the polarization of the light in the magnetic field. The experimental arrangement is described.

L 35588-65

ACCESSION NR: AP4046087

the light vector and the fields it was possible to investigate the part played in the
process of magnetization by the displacement of the domain walls.

It is shown that the

displacement of the

domain walls is

described by the equation

$\frac{dx}{dt} = \frac{1}{2} \frac{dH}{dt}$

ENCLOSURE

2/003

OTHER 104

Co 2/2

ACCESSION NR: AP4023-107

S/0048/84/028/003/0559/0567

AUTHOR: Hirenkiy, L.V.; Savchenko, M.K.; Degtyarov, I.F.; Kan, S.V.; Antipin, I.P.; Tropin, Yu.D.; Edel'man, I.S.

TITLE: Domain structure of ferromagnetic crystals, films, and whiskers, and changes of the structure under the influence of different factors Report, Symposium on Ferromagnetism and Ferroelectricity held in Leningrad 30 May to 5 June 1963

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v.28, no.3, 1964, 559-567

TOPIC TAGS: crystal domain structure, film domain structure, whisker domain structure, domain structure variation, demagnetization condition domain influence, iron crystal domains, iron film asymmetric hysteresis, iron whisker domain

ABSTRACT: This paper summarizes a large amount of information concerning the domain structure of crystals, films, and whiskers, and its change under the influence of magnetizing fields, stress, temperature, and conditions of demagnetization. The topics discussed include the changes in the domain structure of silicon iron crystals during magnetization in various directions; the effect of mechanical stress on the domain structure of silicon iron crystals; the influence of mechanical stress

2/3

ACCESSION NR: AP4023407

ed to the other magnetization axis. The net result is thus a 109° rotation of the domains. The size of the domains in cobalt films increases with the rate of demagnetization by alternating field. This is related to the formation of wedge shaped domains, one within another. When a thin cobalt film is cooled from above the Curie point in a field free environment, an equilibrium domain structure is not formed. The domain structure of a thin iron film was found to change largely by wall shift during traversal of an asymmetric hysteresis loop in the presence of a constant transverse field. This is not in accord with the explanation of these asymmetric hysteresis loops given by V.V.Kobelev (Pitii gisterozisa odnoosnykh ferromagnitnykh plenok. ITM i VT AN SSSR, M., 1961) on the basis of a model in which the magnetization was assumed to rotate uniformly. Orig.art.has: 9 figures.

ASSOCIATION: Institut fiziki Sibirskogo otdeleniya Akademii nauk SSSR (Institute of Physics, Siberian Division, Academy of Sciences, SSSR); Krasnoyarskiy pedagogicheskii institut (Krasnoyarsk Pedagogical Institute)

SUBMITTED: 00

DATE ACQ: 10Apr64

ENCL: 00

SUB CODE: FH

NR REF SCI: 005

OTHER: 003

Card 3/3

Pt-7/Pi-4 IJP(c) JD/HW/GG

196011444

AUTHOR: Antipin, I.P.; Yefimov, V.I.; Savchenko, M.K.; Edol'man, I.S.

TITLE: Domain structure and hysteresis loops of thin ferromagnetic films subjected to strain. Report. Second All-Union Symposium on the Physics of Thin Ferromagnetic Films held in Irkutsk, 10-15 July 1964.

SOURCE: AN SSSR. Investiya. Seriya fizicheskaya, v. 29, no. 4, 1965, 627-628

TOPIC TAGS: ferromagnetic thin film, magnetic property, hysteresis loop, permalloy, iron, cobalt

ABSTRACT Mechanical stresses of some magnitude (depending on the thickness of the film) are applied to thin ferromagnetic films as they are cooled. The effect of such stresses on the magnetic characteristics of the films is investigated. Obviously, for investigating the magnetic characteristics of films it is important to know the effects of such stresses, yet hitherto there have been only a few studies devoted to this factor. Accordingly, the present study was devoted to the purpose of determining the effect of mechanical stresses on the magnetic characteristics of permalloy and cobalt-iron films.

L 50761-65

IDENTIFICATION NO AP5011444

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... during ...

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L 50961-65

195-11144

SUBMITTED: 00

ENCL: 00

SUB CLASS: ER, DL

NR REF SOV: 000

OTHER: 003

er
Card 3/3

L 14989-66 EWT(1)/EWT(m)/EWA(d)/T/EWP(t)/EWP(z)/EWP(b) IJP(c) JD

ACC NR: AP5028556

(N)

SOURCE CODE: UR/0126/65/020/005/0683/0690

AUTHOR: Edel'man, I. S.

ORG: Institute of Physics SO AN SSSR (Institut fiziki SO AN SSSR)

TITLE: Hysteresis loops of biaxial ferromagnetic layers

SOURCE: Fizika metallov i metallovedeniye, v. 20, no. 5, 1965, 683-690

TOPIC TAGS: metal physics, metal film, iron, hysteresis loop, magnetic field, magnetization, ferromagnetic material, free energy, single crystal

ABSTRACT: Based on the theory of uniform rotation of magnetic moment, hysteresis loops were constructed for biaxial ferromagnetic materials. A comparison was made between the theoretical and experimental hysteresis loops obtained during the magnetization of single crystal films of iron. The theoretical calculations were based on the free energy of the layers as a function of magnetization and field.

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UDC: 539.216.2 : 538.23

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Card 1/5

L 14989-66

ACC NR: AP5028556

where ϕ is the angle between the axis of easy magnetization and M , M is magnetization vector and H is magnetic field vector. The critical curves (h_y as a function of h_x) were constructed from the relationship $\partial^2 E / \partial \phi^2 = 0$,

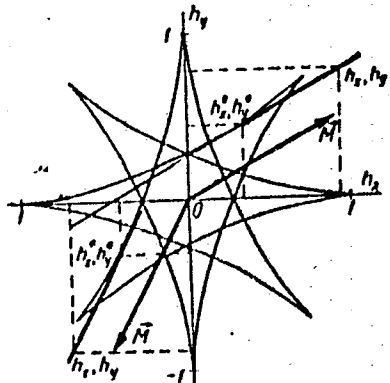


Fig. 1. Critical curve for a biaxial layer. h_x, h_y --arbitrary values of the external field; h_x^u, h_y^u --coordinates of the points of contact. The arrows indicate the stable positions of the magnetization vector M .

The critical curves and the respective hysteresis loops were calculated for different angles of field to the direction of easy magnetization.

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L 14989-66

ACC NR: AP5028556

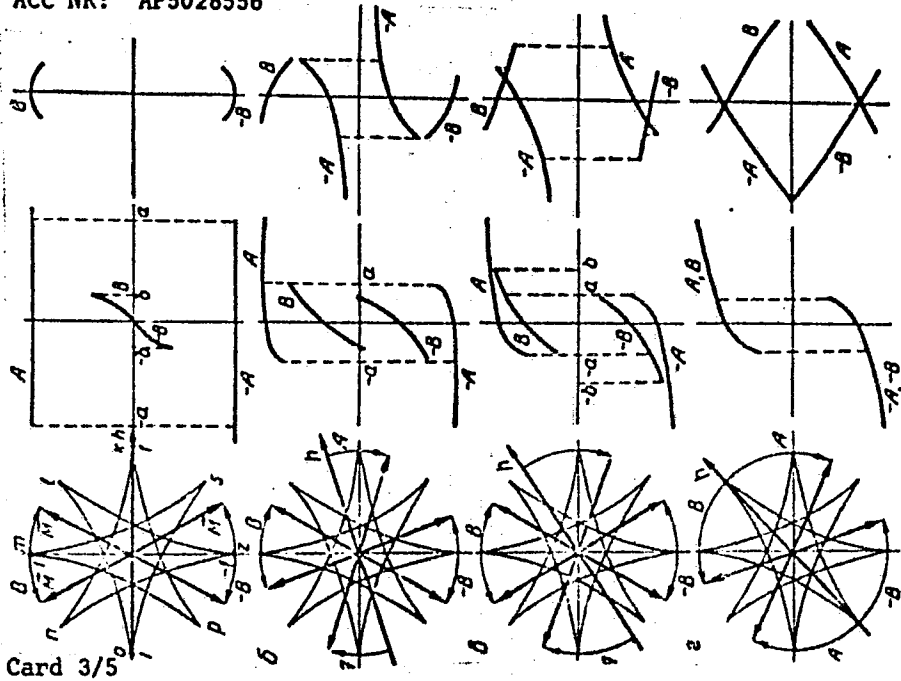


Fig. 2 . Critical curves, longitudinal and transverse hysteresis loops for magnetization of biaxial layers for different angles to the axis of easy magnetization: a--0; b--20; c--35; d--45°. The arrows indicate the boundaries of the positions of constant magnetization vector.

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ACC NR: AP5028556

These same curves were also constructed for the axis of easy magnetization for bi-axial layers, with magnetization at 25° to the axis of easy magnetization as well as for the hard magnetization direction with simultaneous application of a constant transverse field h_\perp having different magnitudes. The following three characteris-

tics were noted for the theoretical hysteresis loops: 1) the presence of two axes of easy magnetization for a single value of the external field results in one to four stable states of the magnetic moment; 2) some of these states are not feasible, but the others are realized and result in a fundamental change in the hysteresis loops for changes in magnetization when compared to the uniaxial case; 3) during magnetization in the hard direction a sufficiently wide longitudinal loop is formed contrary to the case of uniaxial layers. Experimental data were compared to the theoretical findings. Monocrystalline iron layers were used in the form of discs of 6 mm diameter, 650 angstrom thick, with a coercive force in the easy magnetization direction of 30 oersteds. Two perpendicular axes of the [100] type corresponded to the easy magnetization directions (see fig. 3). These curves had all of the characteristics ascribed to them by the theoretical development. Orig. art. has: 6 figures, 7 formulas.

Card 4/5

L 14989-66

ACC NR: AP5028556

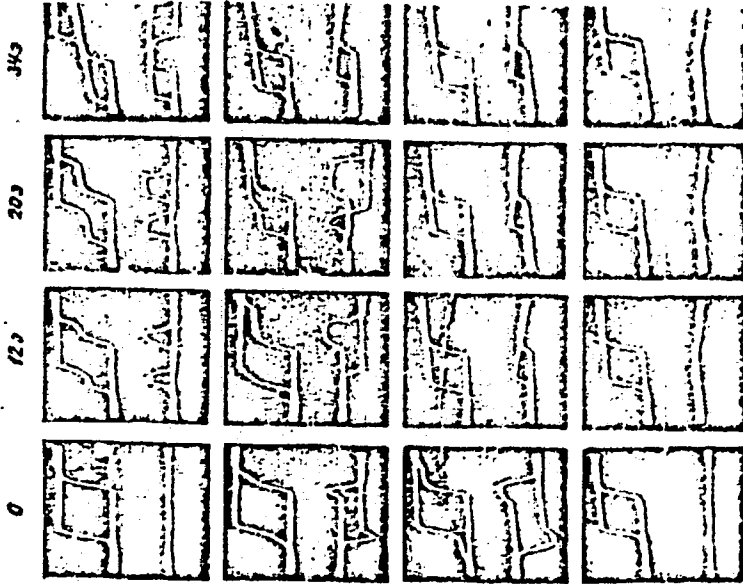


Fig. 3. Hysteresis loops obtained for the magnetization of monocrystals of iron layers with a coercive force of 30 oersteds; upper loops longitudinal, lower--transverse. Angle α equals: a--0; b--20; c--35; d--45°.

Card $\frac{5}{5}$ SUB CODE: 20/ SUBM DATE: 19Nov64/ ORIG REF: 004/ OTH REF: 002

KIRENSKIY, L.V.; SUKHANOVA. R.V.; FYN'KO, V.G.; EDEL'MAN, I.S.

Single-crystal films of iron-nickel alloys. Izv. AN SSSR. Ser.fiz.
30 no.1:50-53 Ja '66. (MIRA 19:1)

1. Institut fiziki Sibirskogo otdeleniya AN SSSR i Krasnoyarskiy
gosudarstvennyy pedagogicheskiy institut.

EDEL'MAN, I.S.

Theory of the magnetic reversal of thin ferromagnetic films.
Izv. AN SSSR. Ser.fiz. 30 no.1:88-90 Ja '66. (MIRA 19:1)

1. Institut fiziki Sibirskogo otdeleniya AN SSSR.

17409-66 EWT(m)/T/EWP(a)/EWP(t) IJP(c) JD/HW
ACC NR: AP6004466 SOURCE CODE: UR/0018/66/030/001/0050/0053

AUTHOR: Kirenskiy, L.V.; Sukhanova, R.V.; Pyn'ko, V.G.; Edel'man, I.S. 59
9

ORG: Physics Institute of the Siberian section of the SSSR Academy of Sciences
(Institut fiziki Sibirskogo otdeleniya Akademii nauk SSSR); Krasnoyarsk State
Pedagogical Institute (Krasnoyarsk gosudarstvennyy pedagogicheskiy institut)

TITLE: Single-crystal films of iron-nickel alloys (Transactions of the Second All-Union
Symposium on the Physics of Thin Ferromagnetic Films held at Irkutsk 10 July to
15 July 1964)

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v.30, no. 1, 1966, 50-53 and insert
(facing page 45)

TOPIC TAGS: ferromagnetic film, magnetic thin film, permalloy, iron nickel alloy,
single crystal, magnetic anisotropy, magnetic coercive force, magnetic domain structure,

ABSTRACT: Single-crystal 800 Å films of ¹Fe-Ni alloys (5 to 95% Ni) were obtained by
vacuum evaporation at 10⁻³ to 10⁻⁴ mm Hg onto the heated (250 to 400C) surface of an
NaCl crystal, although O.S. Heavens (Proc. Phys. Soc. 78, 33 (1961)) and A. Baltz (J.
Appl. Phys., 32, 815 (1961)) found that high vacuum (10⁻⁹ mm Hg) and annealing was neces-
sary to obtain single-crystal films. No reason for this discrepancy is suggested. The
alloys containing less than 20% Ni crystallized in a body-centered lattice with a
lattice constant of 2.823 Å and grew with the (001) face and (100) axis parallel to
the (001) face and (110) axis, respectively, of the NaCl substrate; the alloys con-
Card 1/2

L 17409-66

ACC NR: AP6004466

taining more than 20% Ni crystallized in a face-centered cubic lattice with a lattice constant of 3.576 Å and grew with the (001) face and <100> axis parallel to the (001) face and <100> axis, respectively, of the substrate. Microtwinning was observed. The single-crystal films had two mutually perpendicular easy magnetization axes, this was not observed by S. Chikazumi (J. Appl. Phys., 32, 815 (1961)). The anisotropy constant was positive for films containing up to 79.4% Ni and was negative for films containing 82% Ni or more. The coercive force depended strongly on the temperature of the substrate during deposition; the coercive force of films of an undisclosed composition increased from 9 to 80 Oe as the temperature of the substrate during deposition was increased from 250 to 350C. Films deposited at temperatures below 250C were polycrystalline. The single-crystal films either consisted of a single domain with substructure, or were mottled. After demagnetization in a decreasing ac field parallel to the hard axis the films had 90° domain walls in the direction of the hard axis and 180° walls in the direction of the easy axis. When a mottled film was demagnetized along the easy axis, the spots became aligned along substructure lines; when the same film was demagnetized along the hard axis there appeared domain walls consisting of separate points. The presence of substructure makes it possible to determine the directions of the easy axes. The easy axis directions determined from the substructure agreed with those determined from the shapes of the hysteresis loops. Orig. art. has: 5 figures. [15]

SUB CODE: 20/ SUBM DATE: none/ - ATD PRESS: 4206

2/2 nst

I 15376-66 EWT(1)/EWP(e)/EWT(m)/T/EWP(t)/EWP(b) LIP(c) JD/CG
ACC NR: AP6004476 SOURCE CODE: UR/0048/66/030/001/0088/0090

AUTHOR: Edel'man, I.S. 44
B

ORG: Institute of Physics, Siberian Section of the Academy of Sciences, SSSR
(Institut fiziki Sibirskogo otdeleniya Akademii nauk SSSR)

TITLE: Contribution to the theory of switching of thin ferromagnetic films 21.44.55 } 48.55
actions of the Second All-Union Symposium on the Physics of Thin Ferromagnetic Films
held at Irkutsk 10 July to 15 July, 1964/ III

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v. 30, no. 1, 1966, 88-90

TOPIC TAGS: ferromagnetic film, magnetic thin film, magnetization, hysteresis loop, magnetic anisotropy, theoretic physics

ABSTRACT: Critical curves separating the stable and unstable equilibrium positions of the magnetization are derived from the uniform magnetization rotation model for switching of films having two not necessarily equivalent easy axes. For a film having only one easy axis the critical curve is the well-known astroid; for a film having two equivalent easy axes the critical curve is a regular eight cusped figure. Several less symmetric critical curves are given for films having two non-equivalent easy axes. The construction of theoretical hysteresis loops from the critical curves is discussed briefly and a series of loops for a film with two inequivalent easy axes is presented.

Card 1/2

L 15376-66
ACC NR: AP8004478

For magnetization along either of the easy axes the longitudinal hysteresis loop is rectangular and there is no transverse loop; for magnetization in other directions the longitudinal loops are narrower, their upper and lower branches are curved, and transverse loops appear. The longitudinal hysteresis loops along the two inequivalent easy axes have different widths. Orig. art. has: 6 formulas and 3 figures.

SUB CODE: 20 SUBM DATE: 00 ORIG. REF: 002 OTH REF: 004

TS
Card 2/2

6
47

L 09128-67 EWT(m)/EWP(t)/ETI IJP(e) JD/HW

ACC NR: AP6032617 SOURCE CODE: UR/0126/66/022/003/0380/0391

AUTHOR: Kirenskiy, L. V.; Pyn'ko, V. G.; Sukhanova, R. V.; Sivkov, N. I.; Pyn'ko, G. P.; Edel'man, I. S.; Komalov, A. S.; Kan, S. V.; Syrova, N. Y.; Zvegintsev, A. O.

ORG: Institute of Physics SO AN SSSR (Institut fiziki SO AN SSSR); Krasnoyarsk Pedagogical Institute (Krasnoyarskiy pedinstitut)

TITLE: Epitaxial films of iron, nickel and cobalt [report presented at the Conference on Physics of Ferro- and Antiferromagnetism, Sverdlovsk, 5-7 July 1965]

SOURCE: Fizika metallov i metallovedeniye, v. 22, no. 3, 1966, 380-391 III

TOPIC TAGS: magnetic anisotropy, epitaxial growing, hysteresis loop, metal film

ABSTRACT: The authors study the epitaxial growth of iron, nickel and cobalt films thermally vaporized onto ionic crystals split in air and in a vacuum. It is shown that when the substrates are heated in a vacuum of 10^{-4} mm Hg, the surface state is changed with a favorable effect on epitaxy. The phase composition of the film may be controlled by proper selection of the substrate. The fields of anisotropy of the films are measured and the effect which application of a magnetic field during vaporization has on the magnetic anisotropy of the films is studied. The domain structure of the films and its dynamics are analyzed and the results are used as a basis for explaining the shape of hysteresis loops. The coercive force is measured in films of various thickness. It is shown that the coercive force of the films is always much less than the field of anisotropy and is approximately inversely proportional to the saturation magnetization. Orig. art. has: 13 figures, 1 table, 5 formulas.

SUB CODE: 11, 20/ SUBM DATE: 30Jul65/ ORIG REF: 004/ OTH REF: 007

Card 1/1 nat

UDC: 539.216.25:538.221

PERLI, S. B.; EDEL'MAN, I. Ya.; PAL'CHIK, Yu. R.

Breaking in an electrostatic filter for automatic shaft kilns.
TSement 29 no.2:18-19 Mr-Apr '63. (MIRA 16:4)

1. Yuzhgiprotsement.

(Dust collectors) (Cement plants)

PERLI, S.B.; EDEL'MAN, I.Ye.

Cooling clinkers in recuperators of rotary kilns. TSment 30
no. 2:11-12 Mr-Ap '64. (MIRA 17:5)

1. Gosudarstvennyy institut po proyektirovaniyu tsementnykh
zavodov v yuzhnykh rayonakh SSSR.

PERLI, S.B., kand.tekhn.nauk; BERNSHTEYN, L.A., inzh.; EDEL'MAN, I.Ye., inzh.

Reviews and bibliography. TSeiment 31 no.5:24 S-0 '65.

(MIRA 18:10)

LUSTINEC, Jiri; HADACOVA-POKORNA, Vera; KAMINEK, Miroslav;
EDELMAN, Jack; PETRU, Eva

Randomization of carbon atoms in the glucose molecule and changes of specific radioactivity of $^{14}\text{CO}_2$ liberated by the callus tissue of *Daucus carota* L. from glucose-6- and 1- ^{14}C . *Biologia plantarum* 6 no. 3:209-218 '64.

1. Institute of Experimental Botany, Czechoslovak Academy of Sciences, Prague 6 - Dejvice, Na cvicisti 2 (for all except Edelman). 2. Department of Botany, Imperial College of Science of Technology, London S.W.7, England (for Edelman).

P/014/60/C39/011/003/009
A221/A026AUTHOR: Edelman, Kazimierz

TITLE: Requirements of the Chemical Industry in Regard of Measuring Instruments, Elements of Automation and Their Source of Acquisition

PERIODICAL: Przemysł Chemiczny 1960, Vol. 39, No. 11, pp. 657 - 661

TEXT: The chemical industry is one of the most important users of measuring instruments and of automation elements. In some fully automated plants the costs for instruments are around 25% of the total invested capital, and in the USA this figure is even higher, approaching 40%. In Poland, cost of instruments equals about 1% of the value of machines and installations, but in some plants being built at present, this figure approaches 2 - 7%, in one case even 14.4%. The 5-year plan for 1961 - 1965 foresees a general increase of this index to 4%. In view of this fact, the establishment of local instrument producing industry is of paramount importance; otherwise the demand would have to be covered by imports. The chemical industry is a rather difficult customer for measuring instrument manufacturers, because a) it requires a large variety of instruments for different parameters and ranges, b) it usually takes only small series of the same type instrument, c) it

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Requirements of the Chemical Industry in Regard of Measuring Instruments, Elements of Automation and Their Sources of Acquisition

often requires instruments being corrosion and explosion proof, d) it calls for instruments of great accuracy and, if possible, of small size. Further, the author lists those parameters which have to be measured or regulated and the respective instruments for doing it. For temperature measurements he lists 8 types of thermometers, for pressure measurements 6 types of manometers, for fluid-flow measurements 9 types of flow-meters and on top of this level gauges, weighing machines, automatic analysers - of which he lists 10 types - viscosity meters, automatic pH meters, hydrometers and clocks. For automatic regulation pneumatic installations, often linked with electric ones, are most commonly used. For complex automation digital and analog computers will be used, provided the results of the experiments, carried out at present in the oil refinery at Jedlicze, turn out satisfactory. In principle, all instruments for the Chemical Industry should be made in the country but so far production of same is not yet adequate as to quantity and quality. The author lists a number of firms and enterprises in Poland producing various instruments. Eventually, the author arrives at the following conclusions: Measuring instruments and elements of automation should be manufactured by the heavy industry,

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Requirements of the Chemical Industry in Regard of Measuring Instruments, Elements of Automation and Their Sources of Acquisition

while the chemical industry should concentrate on elaborating prototypes and on manufacturing small series of instruments, typical for this industry. As a matter of fact, there is already the Zjednoczenie Aparatow Pomiarowych i Optyki (Union of Measuring and Optical Instrument Plants) which already has prepared plans for starting the fabrication of instruments and automation elements in 1960 - 1965, but it is doubtful whether it will be put into operation in time. Heavy industry, too, has plans for the organization of a complex enterprise for automation, including design, fabrication, assembly and repair, but no real progress was made yet. Further, the author lists the following desiderata as regards instrument producers: 1) Heavy industry should extend its production plan for 1960 - 1965 and, if possible, put the plants into operation even ahead of schedule; 2) this plan should include the production of a universal type of automation, applicable also to chemical industry; 3) instruments produced should be made in corrosion-resistant and explosion-proof versions; 4) the design of instruments should be up-to-date; 5) the quality of the instruments should comply with standards; 6) in the subject of testing prototypes in the industry, the manufacturers should co-operate with their clients; 7) spare parts should be available; 8) instrument production plans should be attain-

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A221/A026

Plans of Chemical Industry for Introduction of Automation

able to the customers, who in turn will be able to work out their own plans accordingly; 9) heavy industry should organize a complex automation enterprise; 10) all instruments should be supplied with technical working instructions; 11) catalogues of manufactured instruments should be printed in adequate numbers. It would be very desirable and usefull if periodic bulletins would inform about new instrument types or designs. On instrument imports, the author suggested following improvements: 1) To make the most of it; 2) to shorten delivery terms; 3) to standardize some types of imported instruments; 4) to have a centralized foreign-trade organization, which will deal solely with importing and exporting of instruments and automation elements. There is 1 table.

ASSOCIATION: Departament Mechaniki i Energetyki, MPChem. (Ministry of Chemical Industry, Department of Mechanics and Power Supply)

Card 4/4

EDDYMAN, D. I.

"Investigation of the Structure Formation and Elastic-Plastic Properties in the Suspensions and Sols of Aluminum Oxide." Thesis for degree of Cand. Chemical Sci. Sub 22 Mar 50, Moscow Order of Lenin State U imeni M. V. Lomonosov

Summary 71, 4 Sep 52, Dissertations Presented for Degrees in Science and Engineering in Moscow in 1950. From Vechernyaya Moskva, Jan-Dec 1950.

184T25

EDEL'MAN, L. I.

USSR/Chemistry - Thixotropic Mixtures Jan/Feb 51

"Structure Formation and Elastoplastic Properties of Structures in Oil and Aqueous Suspensions of Aluminum Oxide," L. I. Edel'man, P. A. Rebinder, Chair of Colloid Chem, Moscow State U

"Kolloid Zhur" Vol XIII, No 1, pp 64-77

Investigated elastic, plastic, viscous, and thixotropic properties of aq and oil suspensions of Al_2O_3 , and effects of admixts of surface-active substances, electrolytes, and colloidal fraction of $Al(OH)_3$ sol on these properties.

LC

184T25

EVEL MANN, L.J.

CA

2

Structure formation and elastic-plastic properties of aluminum hydroxide gels. I. I. Rabinman and P. A. Motobner (Moscow Univ.) *Kolloidn. Zh.* 13, 142 (1951); cf. C.A. 45, 3044d. The starting $Al(OH)_3$ sols were prepd. by hot hydrolysis of Al diacetate and aging for 3 months or 3 yrs. (sol 1) or by peptizing pptd. $Al(OH)_3$ with HCl and dialysis. The 0.5% sols became thixotropic on adding of 0.25-0.5 mole NaCl, 0.003-0.02 mole Na_2SO_4 , or 0.008-0.008 mole Na_2HPO_4 per l. The mech. behavior of the gels between two concentric cylinders of which one, on a torsion wire, is turned from the equil. position, can be described by means of 8 independent parameters: E_1 , E_2 , η , ν , and P_0 . E.g., E_1 increased from 7000 to 16,000, E_2 from 6800 to 27,000 dynes/sq. cm., η from 2×10^7 to 13×10^7 poises, and P_0 from 0 to 600 dynes/sq. cm. when the concn. of Na_2HPO_4 increased from 0.0018 to 0.003 M. The increase of the gel concn. from 0.2% to 1% increased all these parameters, e.g., 20-80 fold. When a gelatine gel was disturbed and allowed to set, the final E_1 was independent of the stage during which the disturbance took place. After several disturbances of the structure the gels ceased to be thixotropic. Disturbance of aged gels was less effective than that of fresh gels. Addn. of Al_2O_3 powder to sol 1 increased E_1 , η , and P_0 ; these quantities were max. at about 8% Al_2O_3 in 0.5% l. passed through a min. at 8% Al_2O_3 and were like those of a suspension at higher concns. of Al_2O_3 . These effects were due to the electrolyte content of the Al_2O_3 ; electrodialed Al_2O_3 made sols into thixotropic gels when its concn. was 15% or more. I. I. R.

AUTORS: Edel'man, L. I., Sominskiy, D. S. 20-114-4-45/63

TITLE: The Influence of the Additions of Surface-Active Substances on the Intensity of the Vibrational Grinding of Cement (Vliyaniye dobavok poverkhnostno-aktivnykh veshchestv na intensivnost' vibratsionnogo izmel'cheniya tsementa)

PERIODICAL: Doklady Akademii nauk SSSR, 1957, Vol. 114, Nr 4, pp. 844-847 (USSR)

ABSTRACT: The effect of the decrease in firmness conditioned by adsorption was discovered and studied in the papers of Rebinder and assistants regarding various solid substances. It was observed when grinding, fire-proof materials, dyes and ores in a moist state. The introduction of some surface-active substances makes it possible to raise the dispersion of cement considerably. Besides being ascribed to the effect of the decrease in firmness due to adsorption, the increase in grinding intensity is sometimes also ascribed to the desaggregating action of surfaceactive additions. The authors investigated the influence of such additions on the crushing intensity at the grinding of Portland-cement in a laboratory vibration mill. The hydrophylic additions of the sulfite-

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The Influence of the Additions of Surface-Active Substances 20-114-4-45/63
on the Intensity of the Vibrational Grinding of Cement

alcohol slop (calcium lignosulfonates), and the hydrophobic additions of sapon-naphth (mylonaft), acidol saponnaphth and oleic acid (0,1-1% of the weight of the cement) were studied. The introduction of surface-active substances intensifies the dispersion of cement.

Thereby the specific surface is enlarged. The hydrophobic additions are more active than the sulfite-alcohol slop. Thereby the time of cement grinding may be shortened on the average by 50%. This increase of surface occurs at the expense of the augmentation of the fine particle fractions (below 5μ of radius). The influence of a surface-active substance (oleic acid) increases only within a content of between 0,1 to 0,5% at 20 minutes of continuous crushing. Higher percentages become effective only in the case of one hour of crushing. Furthermore, the influence of the acting efficacy of the said additions upon the crushing kinetics of cement was examined in dependence on the frequency and the amplitude of vibrations of the mill substance. The influence of the surface-active additions is clearly marked only in the domain of the optimum parameters of vibration crushing at a sufficiently high frequency and amplitude. From this it may

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The Influence of the Additions of Surface-Active Substances 20-144-4-45/63
on the Intensity of the Vibrational Grinding of Cement

be concluded that the above-mentioned grinding intensification is not due to the prevention of aggregation of small particles of the finely disperse material, i.e. not by its stabilization, but by the primary effect of decrease in solidity, in so far as the stabilizing (desaggregating) action of the additions is apparently not connected with the grinding mechanism. The adsorption character of the intensification is confirmed by the dependence on the concentration of the addition. Based upon experimental results it may be said that the chief factor of the intensification is the sufficiently high frequency of the vibrations. These results are in accordance with the opinions of Rebinder and his assistants on the role of substances which decrease firmness in the case of periodically destructive influences upon solid matter. There are 2 figures, 1 table, and 18 references, 8 of which are Soviet.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut novykh
Card 3/4 problem proizvodstva stroitel'nykh materialov na ~~base~~ tonkogo
izmel'cheniya (All-Union Scientific Research Institute for

The Influence of the Additions of Surface-Active Substances 20-144-4-45/63
on the Intensity of the Vibrational Grinding of Cement

New Production Problems of Building Material Based Upon
Fine Crushing)

PRESENTED: December 30, 1956, by P. A. Rebinder, Member, Academy of
Sciences, USSR

SUBMITTED: December 30, 1956

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5(4)

SOV/69-21-1-18/21

AUTHORS: Edel'man, L.I. and Sominskiy, D.S.

TITLE: To the Evaluation of the Aggregate Stability of Suspensions. (K otsenke agregativnoy ustoychivosti suspenziy)

PERIODICAL: Kolloidnyy zhurnal, 1959, Vol XXI , Nr 1, pp 126-131 (USSR)

ABSTRACT: A method has been developed for evaluating the stability of a suspension aggregate by optical density measurements. It has been shown that the method permits the selection of the optimum dispersion media and the surface active agents for the production of the most stabilized disperse systems. Using this method, the optimum dispersion media have been selected for finely ground powders of limestone, granulated blast-furnace slag, iron minium, and cement. Optimum surface active agents have also been found for aqueous suspensions of

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SOV/69-21-1-18/21

To the Evaluation of the Aggregate Stability of Suspensions.

talcum and sulfur. The results obtained coincided well with data from densitometric analysis. There are 3 graphs and 3 tables and 7 references, 5 of which are Soviet, 1 English and 1 German.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut novykh problem proizvodstva stroitel'nykh materialov na baze tonkogo izmel'cheniya. (The All-Union Scientific Research Institute of New Problems of Production of Building Materials on a Fine Grounding Base.)

SUBMITTED: March 12, 1957.

Card 2/2

EDEL'MAN, L.I., kand. khim. nauk; RAYNYSH, S. B., 1928.

Method of estimating the degree of aggregation of powders
during sintering. Sbor. trud. VNIINSM no.8:146-153 '63.

(MIRA 17:9)

EDEL'MAN, L.I.; KHODAKOV, G.S.

Sedimentation analysis of disperse systems with continuous recording of the weight of accumulated deposit in the centrifugal field. Koll. zhur. 26 no.3:380-385 My-Je '64. (MIRA 17:9)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut novykh stroitel'nykh materialov, Moskva.

KHODAKOV, G.S.; EDPL'MAN, L.I.

Float-type photoelectric recording device for analysis of variance
in a centrifugal field. Zav. lab. 30 no.8:1024-1025 '64.

(MIRA 18:3)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut novykh stroitel'-
nykh materialov.

FRIBYL'SKIY, Ivan Stepanovich; EDEL'MAN, M., red.

[The Black Sea Economic Region] Chernomorskii ekonomicheski.
Odessa, Odesskoe knizhnoe izd-vo, 1963. 146 p.
(MIRA 17:5)

L 36334-66 EWP(k)/EWT(d)/EWP(h)/EWP(l)/EWP(v) BC/ED

ACC NR: AT6012900

SOURCE CODE: UR/0000/66/000/000/0229/0234

AUTHOR: Gurevich, K. M.; Edel'man, L. M.

27

ORG: None

B+1

TITLE: Professional aptitude and throughput of operators

SOURCE: Sistema chelovek i avtomat (Man-automaton systems). Moscow, Izd-vo Nauka, 1965, 229-234

TOPIC TAGS: psychology, man machine ^{relations} ~~communication~~, aptitude testing, automatic control equipment

ABSTRACT: The authors study professional aptitude of operators. The main determinant of professional attitude in operating automatic control equipment is behavior under emergency conditions. The main task is to determine what psychological characteristics of man are indicative of the possible loss of self control. After considering many instances of known appropriate reactions to emergency conditions, it was proposed that inadequate behavior of a worker under emergency conditions was in all probability determined by certain natural data such as the characteristics of his nervous system, excitation process, and the balance of nerve processes. Research anti-emergency training is studied. This'

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ACC NR: AT6012900

training consists of placing an operator in a simulated emergency state. The behavior of the operator under simulated emergency conditions is observed by a technician and a psychologist. 30 such experiments were performed. Six cases were observed where gross errors were performed. In these six cases confusion was the most evident factor contributing to these errors. In 9 out of the 30 cases correct behavior was observed. In 15 cases insignificant errors were noted. A relationship could not be established between correct behavior under emergency conditions and work complexity or special qualifications of the operator. Operators were subjected to special psychological study in order to determine special characteristics of their nervous systems. Bases have not been determined for studying throughput which is one of the main components of aptitude. It is necessary to continue the study of the professional aptitude of operators.

SUB CODE: 05 / SUBM DATE: 02Aug65

06/

Card 2/2 *95*

EDELMAN, M.

Input-output tables in the Soviet economy. Stat szemle 40 no.1:
26-35 Ja '62.

EDELMAN, Marek

MUSIAL, Wlodzimierz; EDELMAN, Marek; JUDKIEWICZ, Luba; PANASIUK, Emilia

Clinical considerations on so-called lower nephron nephrosis. Polski tygod. lek. 9 no.51-52:1618-1622 27 Dec 54.

1. Z II Kliniki Chorob Wewnetrznych Akademii Medycznej w Lodzi;
kierownik: prof. dr med. Jerzy Jakubowski.
(LOWER NEPHRON NEPHROSIS,
clin. aspects)

EDELHMAN, MAREK

MUSIAL, Wladzimierz; EDELHMAN, Marek

Acute nephrosis with anuria in infected abortion. Gyn. polska 25
no.1:21-31 Ja-Mr '54.

1. Z II Kliniki Chorob Wewnętrznych Akademii Medycznej w Łodzi.

Kierownik: prof. dr med. J. Jakubowski.

(ABORTION, CRIMINAL, complications,

*anuria & nephrosis)

(ANURIA, etiology and pathogenesis,

*abortion, criminal, with nephrosis)

(NEPHROSIS, etiology and pathogenesis,

*abortion, criminal, with anuria)

EDELMAN, M.

Administration of thioacetamide in thallium salt poisoning.
M. Edelman and T. Lipliec (School Med., Lodz, Poland).
Bull. acad. polon. sci., Classe II 3, 95-7(1955)(in English).
—Thioacetamide (I) reacts with Tl_2SO_4 in blood serum *in vitro* to produce a ppt. of Tl_2S . Intravenous I saved the lives of 9 of 10 rabbits which had been given a lethal dose of Tl_2SO_4 , but was ineffective against 2 or 3 times the lethal dose. Intramuscular I was also ineffective. In 4 cases of human Tl_2SO_4 poisoning, intravenous I caused improvement, with disappearance of neurologic symptoms, but it did not prevent loss of hair. Preliminary investigations indicate I may also be efficacious in Pb and Hg poisoning.
L. A. Pursglove

(1)

EDELMAN, Marek; NOWICKA, Helena; SZAFF, Jędwiga

A case of stomach cancer with symmetric metastasis to humeruses.
Polski tygod. lek. 10 no.10:310-313 7 Mar 55.

1. Z II Kliniki Chorob Wewnętrznych A.M. w Łodzi; kierownik: prof.
dr Jerzy Jakubowski. Łódź, ul. Sterlinga 1/3.

(STOMACH, neoplasms,
metastasis to humerus)

(HUMERUS, neoplasms,
metastatic from carcinoma of stomach)

EDELMAN, Marek

Two cases of thallium poisoning cured by thioacetamide. Polski tygod.lek. 10 no.15:465 12 Apr 55.

1. Z II Kliniki Chorob Wewnętrznych A.M. w Łodzi; kierownik: prof. dr Jerzy Jakubowski. Łódź, ul. Sterlinga 1/3.

(THALLIUM, poisoning,
ther. thioacetamide)

(ACETIC ACID, derivatives,
thioacetamide, ther. of thallium, pois.)

EDELMAN, Marek; LIPIEC, Tadeusz

~~SECRET~~
Therapeutic application of thioacetic acid amide in heavy metal poisoning. Polski tygod.lek.10 no.27:883-884 4 July '55.

1. Z II Kliniki Chroeb Wewnetrznych A.M. w Lodzi; kierownik: prof. dr Jerzy Jakubowski i z Zakladu Chemii Nieorganicznej i Analitycznej A.M. w Lodzi; Kierownik: prof. dr Tadeusz Lipiec). Lodz, ul.Sterlinga 1/3

(POISONING,

heavy metals,ther.,thioacetic acid amide)

(ACETIC ACID derivatives,

thioacetic acid amide,ther. of heavy metal pois.)

EDELMAN, Marek, SZAFK, Jadwiga

Malignant exophthalmos. Polskie arch.med. wewn. 28: no. 2: 239-243
1958

1. z II Kliniki Chorób Wewnętrznych A.M. w Łodzi. Kierownik: prof.
dr nauk med. J. Jakubowski. Adres autorat: Łódź, Sterlinga 1/3.
II Klinika Chorób Wewn. A.M.
(HYPERTHYROIDISM, case reports
(Pol)