"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6

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

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

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

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

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

[Abstracter's note: Complete translation]

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ROMANIA

PETRESCU, N.; SOMESAN, M.

Bucharest, Studii si Cercetari de Metalurgie, No 3, 1963, pp 265-276

"Contribution to the Study of the Cellular Substructure of Aluminum with Copper Alloy."

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6

[illegible], Nicolae; [illegible], Maria

Contributions to the study of the cellular substructure of aluminum dotted with copper. Rev Roum metallurg 9 no. 1:[illegible]-73 '64.

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6

L 32807-66 EWP(e)/T/EWP(t)/ETI IJP(c) JD/JG/AT/WH

ACC NR: AP6023766 SOURCE CODE: GE/0061/65/015/05-/0313/0320

AUTHOR: Badareu, E.; Popovici, C.; Iova, I.; Somesan, M.

ORG: Institute of Physics, Academy of the Rumanian People's Republic, Bucharest

TITLE: Hollow-cathode effect in cesium vapor

SOURCE: Annalen der physik, v. 15, no. 5-6, 1965, 313-320

TOPIC TAGS: cesium plasma, discharge tube, spectrographic analysis

ABSTRACT: The article deals with processes taking place in a hollow-cathode discharge tube with cesium vapor. The cathode here consists of two parallel plates; the negative charges travel from the space between these plates out toward the anode. The cathode plates are made of nickel embedded in quartz and a cesium pill inside the tube produces the vapor atmosphere. Two sets of measurements were made: 1) electrical (current vs. pressure and current vs. distance between the two cathode plates), 2) spectrographic (intensity distribution of the Cs II lines 4616.13 and 4867.5 Angstroms, also of the Ba I 6019.17 Angstrom line for comparison). This distribution of intensity has a maximum in the middle of the intercathode space; the magnitude of this maximum varies with pressure, attaining the highest value at about 0.01 mm Hg for both Cs lines. A direct relation between spectral in-

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ACC NR: AP6023766

tensity and discharge current is obtained by eliminating pressure as the independent variable for both. As a result, a straight proportion between current and intensity is found. [JPRS]

SUB CODE: 20 / SUBM DATE: 09Nov64 / ORIG REF: 007 / SOV REF: 001
OTH REF: 012

Card 2/2 mgs

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6

POPOVICI, C; SOMESAN, M.

On the lighting phenomenon of the discharge in a nonhomogeneous electric field at low pressures in a particular geometry of electrodes. Studii cerc fiz 17 no.2:113-133 '65.

1. Institute of Physics, 114 Calea Victoriei, Bucharest. Submitted August 15, 1964.

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6

L 64087-65 EWT(1)/T/EWP(t)/EWP(b)/EWA(h) IJP(c) JD/AT

ACCESSION NR: AP5022474 RU/0027/64/009/002/0119/0128

AUTHOR: Petrescu, N.; Zamirca, St.; Somesan M. 21 26 B

TITLE: Study of the structural stability of the semiconductor compound InAs

SOURCE: Studii si cercetari de metalurgie, v. 9, no. 2, 1964, 119-128

TOPIC TAGS: semiconducting material, indium compound, arsenide, radioactivity measurement, thermal stability 27 27

ABSTRACT: In order to study the thermal stability of In-As compounds, the authors determined the kinetics of the dissociation of the compound with volatile elements by means of measurements of the radioactivity of marked constitutents. The results were used to construct a curve of the kinetic dissociation as a function of temperature within the framework of a process in which the compound was almost completely dissociated. Orig. art. has: 1 figure, 1 graph, 4 formulas.

ASSOCIATION: none

SUBMITTED: 00 ENCL: 00 SUB CODE: SS

NR REF SOV: 002 OTHER: 011 JPRS

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Card 1/1

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[illegible]

[illegible] of the structural stability of the semiconductor compoun[illegible]
[illegible] no.2:[illegible] '64.

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"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6

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

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

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6

[illegible], I.

SOMEGEY I. - Some operative planning methods fos serial production at the Red Star Tractor Factory. p. 19, Vol. 10, no 8, Aug. 1956 TOBBTERMELES. (Uzemi Tervgazdasagi es Szervezesi Tudomanyos Egyesulet) Budapest.

SOURCE: East European Accessions List (EEAL) Vol. 6, No. 4--April 1957

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6

SOMFAI, Ferenc

Electric joining methods. Finommechanika 2 no. 10:295-301 O '63.

1. Climatologic Laboratory, Beloiannisz Telecommunication Engineering Factory, Budapest.

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6

SOMFAI, J.; NOGRADY, G.

Investigations on the effect of climate on the miners. Orv. hetil. 91 no.28:871-875 9 July 50. (CIML 20:7)

1. Institute of Public Hygiene (Director--Dr. Karoly Rauss), Pecs University.

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1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

BANYASTI LAPOK
HUNGARIAN JOURNAL OF MINING
Vol. (LXXXIV) 1951
No. 1, Jan.

Somfai
Problems of manpower management in the mining industry ..... (1) (1)

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6

"Supply of Drinking Water in the Mines in the Mecsek Mountain Area; Also, Remarks by [illegible] and Others", p. 361, (HIDROLOGIAI KOZLONY, Vol. 33, No. 9/10, Sept./Oct. 1953, Budapest, Hungary)

SO: Monthly List of East European Accessions (EEAL), LC, Vol. 4, No. 3, March 1955, Uncl.

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6

SOMFAI, Jeno, dr.

Problem of rheumatism in railroad workers. Nepegeszsegugy 36 no. 8:208-212 Aug 55.

1. Kozlemeny a Pecsi MAV Rendelointezetbol (vezeto-foorvos: Horvath, Jozsef dr.).
(RHEUMATISM, epidemiology,
in railroad workers in Hungary.)

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6

SOMFAI, J.

Protection against dust in mining and our tasks in preventing injuries caused by dust. p. 73. (Banyaszati Lapok, Vol. 11, no. 2, Feb. 1956 Budapest)

SO: Monthly List of East European Accession (EEAL) LC, Vol. 6, no. 7, July 1957. Uncl.

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6

SOMFAI, Jeno, dr.

Health protection and morbidity in the Mecsek coal region. Nepegeszsegugy 11:331-341 N '61.

1. A Baranya megyei KOJAL kozlemenye.

(INDUSTRIAL MEDICINE) (MINING)

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6

SZABE, Istvan; SOMFAI, Karoly

Up-to-date methods for treating hardened materials.
Ujit lap 14 no.9:58-60 10 My '62.

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6

HODOS, Matyas; SOMFAI, Karoly

Visual counting relay. Villamossag 11 no.7:218 Jl '63.

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6

FRENKL, Robert; CSALAY, Laszlo; MAKARA, Gabor; SOMFAI, Zsuzsa; SEIMECI, Laszlo; Technikai asszisztens: OLIVANYI, Nenia

Effect of systematic muscular activity on the serotonin sensitivity in rats. Kiserl. orvostud. 16 no.4:391-393 Ag '64.

1. Budapesti Orvostudomanyi Egyetem Korelettani Intezete.

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6

FRENKL, R.; CSALAY, L.; MAKARA, G.; SOMFAI, Zsuzsa

The effect of regular muscle activity on the histamine sensitivity of the rat. Acta physiol. acad. sci. Hung. 25 no.2:199-202 '64.

1. Institute of Pathophysiology, University Medical School, Budapest.

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6

MAKARA, G.B.; GYALAY, L.; FRENKL, R.; SOMFAI, Tamasa; STRIGHATI, K.

Effect of capsaicin on experimental ulcer in the rat. Acta Med. acad. sci. Hung. 21 no.2:213-216 '65.

1. Pathophysiological Institute, University Medical School, Budapest, and Research Institute of Experimental Medicine, Hungarian Academy of Sciences, Budapest. Submitted January 15, 1965.

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6

L 15481-66

ACC NR: AT6007428 SOURCE CODE: HU/2505/65/026/00X/0039/0039

AUTHOR: Frenkl, R.; Csalay, L.; Somfai, Zsuzsa; Zelles, T.; Sos, J. 13

ORG: Institute of Pathophysiology, Medical University of Budapest, Budapest (Budapesti Orvostudomanyi Egyetem, Korelettani Intezet) B+1

TITLE: Effect of regular muscular activity on factors involved in the pathogenesis of experimental cardiopathy [This paper was presented at the 29th Meeting of the Hungarian Physiological Society held in Szeged from 2 to 4 July 1964]

SOURCE: Academia scientiarum hungaricae. Acta physiologica, v. 26, Supplement, 1965, 39

TOPIC TAGS: cardiovascular system, rat, protein, gamma globulin

ABSTRACT: The effect of muscle activity on the factors involved in the pathogenicity of the cardiopathogenic diet S-65 has been studied. Rats kept on the cardiopathogenic diet and forced to swim daily had significantly lower blood cholesterol levels than the rats which were kept on the diet without exercise. Comparable values were obtained from the control animals and those which were forced to swim. It

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"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6

L 15481-66
ACC NR: AT6007428

is known from the literature that the blood lipid level is lowered by exercise. This was found to be valid in chronic experiments as well and may play a role under pathological conditions. Swimming and the diet produced similar changes in the serum protein pattern (decrease of albumin, increase of globulin). In the swimming groups, the gamma globulin was higher than in the control and dietary groups. At the present stage of the experiments, only slight cardiac changes are revealed by histological examination in some of the animals kept on the cardiopathogenic diet. [JPRS]

SUB CODE: 06 / SUBM DATE: none

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6

L 43639-66

ACC NR: AT6032344 SOURCE CODE: HU/2505/65/027/001/0021/0025

AUTHOR: Makara, Gabor; Csalay, Laszlo; Frenkl, Robert; Somfai, Zsuzsa

ORG: Institute of Medical Research, MTA, Budapest (MTA Kiserleti Orvostudomanyi Kutato Intezet); Institute of Pathophysiology, Medical University of Budapest, Budapest (Budapesti Orvostudomanyi Egyetem, Korelettani Intezet)

TITLE: Effects of serotonin following desensitization with capsaicin

SOURCE: Academia scientiarum hungaricae. Acta physiologica, v. 27, no. 1, 1965, 21-25

TOPIC TAGS: serotonin, body temperature, pharmacology

ABSTRACT: On desensitization with capsaicin, the body temperature-lowering, antidiuretic and local edematogenous actions of a low dose of serotonin are diminished while the temperature-lowering and ulcerogenic effects of a high dose of it remain unchanged. Orig. art. has: 5 figures. [Orig. art. in Eng.] [JPRS]

SUB CODE: 06 / SUBM DATE: 15Nov63 / ORIG REF: 002 / OTH REF: 010

Card 1/1

0919 2396

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6

ANTAL, Elemer, dr.; SOMFALVI, Bela, dr.; BIRO, Ferenc, dr.; HORVATH, Andor, dr.

On the etiology of congenital crus varum. Orv.hetil. 102 no.30: 1410-1411 23 Jl '61.

1. Komloi Varosi Tanacs Korhaz es Nemibeteggondozo Intezet.

LEG abnorm) (SYPHILIS CONGENITAL compl)

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6

SOMFALVY, Istvan, dr.; ORBAN, Laszlo

Current problems of material management. Vasut 13 no.9:7-9 S '63.

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6

SOMHEGYI, Ferenc

The 1961 achievements in the technical development of the construction industry. Epites szemle no.8:241-249 '62.

1. Epitesugyi Miniszterium Muszaki Fejlesztesi Foosztalyanak osztalyvezetoje.

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"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6

SOMHEGYI, Ferenc

Achievements in the technical development of the construction industry in 1962. Epites szemle 7 no.11/12:325-330 '63.

1. Epitesugyi Minjaszterium Muszaki Fejlesztesi Foosztalyanak osztalyvezetoje.

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"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6

SOMHEGYI, K.

Porous chromium-plated piston rings. K. Somhegyi. *Jármúvek Lapja* 1, 336-8 (1954); *Hung. Tech. Abstr.* 7, No. 3, 7 (1955). The friction surface of upper piston rings was chrome plated [illegible]. The coating consisted of [illegible] to the cast iron ring and 1/2 porous Cr on the surface. In the first stage the entire coating was deposited in the form of [illegible]. This was effected [illegible] amp./sq. dm. [illegible] 5 hrs. Then the [illegible] were interchanged and the porous structure was produced at 4[illegible] amp./sq. dm. in 10-12 min. The total thickness of the Cr coating was 0.16 mm., of which 0.05 mm. was of porous texture. The porous, soft external layer soon wore away, the ring adapted itself to the shape of the cylinder, and its hard, wear-resistant external surface acted as an excellent seal. Thus far endurance tests lasting 700 hrs. have been conducted with tractor engines with various liners. The results are favorable.

K. L. C.

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"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6

SOMHEGYI, K.

"Planning and Typification of Industrial Gas Furnaces", P. 310, (MAGYAR ENERGIAGAZDASAG, Vol. 7, No. 7, July 1954, Budapest, Hungary)

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 3, No. 12, Dec. 1954, Uncl.

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6

SOMHEGYI, K.

The Csepel mountain diesel truck. p.7.
AUTO MOTOR, Budapest. Vol 9, no. 3, Feb 1956.

SOURCE: EEAL, Vol 5, no. 7, July 1956

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6

SOMHEGYI, K.

Two-step, double transmission, differential gear. p. 8
AUTO MOTOR. (Kozlekesesi Kiado) Budapest Vo. 9, no. 8 Apr. 1956

Source: EEAL - LC Vol 5. No. 10 Oct. 1956

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6

SCHILGYI, K.

"Consequences of the impurities of municipal gas for its transport and use, and experiences with preventing breakdowns; also, remarks by J. Beczkoy."

p. 391 (Energia Es Atomtechnika) Vol. 10, no. 8/10, Dec. 1957
Budapest, Hungary

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

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6

KORANYI, Gyorgy, dr.; WUNSCH, Walter, Dr. ing.; OECHELHAUSER, Kurt; PUTNOKY, Janos; SOMHEGYI, Karoly; SZUMAN, Witold; VALY, Ferenc, dr.; DOBO, Laszlo; NAGY BIRO, Sandor; VIDA, Miklos; TOBAK, Lajos; MAKOLDI, Mihaly; NASZALYI, Laszlo; HUNEK, Emil

Technical and economic questions relating to gas utilization. Ipari energia 3 no.1/2:9-14 Ja-F '62.

1. Fovarosi Gazmuvek muszaki igazgatoja (for Valy).

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6

SOMI-KOVACS, Tibor, Dr.

Simple and load blood sedimentation tests in pulmonary tuberculosis. Tuberkulozis 11 no.7-8:167-168 July-Aug 58.

1. Budapest Fovarosi Tanacs V. V. XII. Egeszsegugyi osztalya (vezeto foorvos: Vikol Janos dr.) kozlemenye.

(TUBERCULOSIS, PULMONARY, blood in
sedimentation rate measurements in fasting & non-fasting states (Han))

(BLOOD SEDIMENTATION, in various dis.
tuberc., pulm., rate measurements in fasting & non-fasting states (Han))

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6

BOSZORMENYI, Miklos, dr.; SOMI-KOVACS, Tibor, dr.

Principles of hospitalization of adult tuberculous patients. Tuberkulozis 13 no.3:65-72 Mr '60.

1. Az Orszagos "Koranyi" Tbc Intezet (igazgato: Boszormenyi, Miklos, dr. kandidatus ; tudomanyos vezeto: Foldes, Istvan, dr. kandidatus) kozlemenye.
(TUBERCULOSIS hosp. & clin.)

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6

BOSZORMENYI, Miklos, dr.; KANITZ, Eva, dr.; LEVENDEL, Laszlo, dr.; MAROTI, Antal, dr.; SOMI-KOVACS, Tibor, dr.; SCHWEIGER, Otto, dr.; VARADY, Tibor, dr.

Preliminary clinical observations on Trecator. Tuberkulozis 14 no.10: 292-295 O '61.

1. Az Orszagos Koranyi Tbc Intezet (Igazgato: Boszormenyi Miklos dr. kandidatus, tudomanyos igazgato: Foldes Istvan dr. kandidatus) kozlemenye.

(ANTITUBERCULAR AGENTS ther)

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6

SOMI-KOVACS, Tibor, dr.; statisztikai munkatars: HUBER, Marta

Analysis of the results of mass radiography in the years 1959-60. Tuberkulozis no.8:228-231 Ag '62.

1. Az Orszagos Koranyi Tbc Intezet (igazgato-foorvos: Boszormenyi Miklos dr. kandidatus; tudomanyos igazgato: Foldes Istvan dr. kandidatus) kozlemenye.
(MASS CHEST X RAY)

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6

SOMI-KOVACS, Tibor, dr.; NEMETH, Tibor, dr.; HORVATH, Bertalan, dr.; MAROTI, Antal, dr.; Statisztika: HUBER, Marta

Contributions to a new method of evaluating early therapeutic results in patients with pulmonary tuberculosis. Tuberkulozis 16 no.9:257-260 S '63.

1. Az Orszagos Koranyi Tbc Intezet (igazgato-foorvos: Boszormenyi Miklos dr. kandidatus; tudomanyos igazgato: Foldes Istvan dr. kandidatus) kozlemenye.

(TUBERCULOSIS, PULMONARY) (STREPTOMYCIN)
(AMINOSALICYLIC ACID) (ISONIAZID)
(PNEUMONECTOMY) (THORACOPLASTY)
(STATISTICS)

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6

SOMI-KOVACS, Tibor, dr.; Statisztikai munkatars: HUBER, [redacted]

Evaluation of the mobile x-ray mass screening in 1961 and some problems of its further development. Tuberkulozis 16 no.10: 304-307 O '63.

(TUBERCULOSIS, PULMONARY) (MASS CHEST X-RAY)
(STATISTICS)

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6

SOHI-KOVACS, Tibor, dr.; BOSZORMENYI, Miklos, dr.; WAHALI, Tamas, dr.

Contribution to the problem of evaluation of the central shadow on fluoroscopic films. Orv. hetil. 106 no.42:1987-1989 17 O '65.

1. Orszagos Koranyi Tbc Intezet (igazgato: Boszormenyi, Miklos, dr.).

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6

S'OMIK, P.M. [S'omyk, P.M.]

Securing feeds for communal livestock is a duty of mechanizers. Mekh. sil'. hosp. 14 no.7:3-5 Jl '63. (MIRA 17:2)

1. Zaveduyushchiy otdelom mekhanizatsii, elektrifikatsii i sel'skogo stroitel'stva TSentral'nogo komiteta Kommunisticheskoy partii Ukrainy.

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6

USSR/Medicine - Breast, Inflammation, Therapy — Mar 48

Medicine - Penicillin

"Treatment of Suppurative Mastitis by Puncture and Penicillin," A. Ya. Somikhin, Hosp Surg Clinic, First Leningrad Med Inst imeni Acad I. P. Pavlov, 4 pp

"Vest Khirurgii" Vol LXVIII, No 3

Describes method and summarizes results. Advantages are (1) healthy gland tissue is not damaged, (2) patients' feeding is not restricted by chest pain, (3) no dressing required, mammary gland and

[redacted]

17/49T98

USSR/Medicine - Breast, Inflammation, Therapy (Contd) — Mar 48

clothing are not contaminated by pus, (4) mammary gland does not become deformed, (5) healing is rapid, and (6) method is simple and not too painful.

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APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6

SOMIKHIN, A.Ya., kandidat meditsinskikh nauk, Leningrad, ul. Vosstaniia d. 1/39, kv.19.

Fixation of dislocation of the hip. Vest.khir. 75 no.5:107-109 Je '55. (MLRA 8:10)

1. Iz gospital'noy khirurgicheskoy kliniki (zav.prof. F.G.Uglov) 1-go Leningradskogo meditsinskogo instituta im. I.P.Pavlova.
(HIP, dislocations, ther.)
(DISLOCATIONS, hip, therapy)

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6

SOMIKHIN, A.Ya.

Diagnosis of surgical forms of brucellosis. Vest.khir. no.4: 116-119 '61. (MIRA 14:4)

1. Iz gospital'noy khirurgicheskoy kliniki (zav. - prof. F.G. Uglov) 1-go Leningradskogo meditsinskogo instituta im. I.P. Pavlova.

(BRUCELLOSIS)

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6

SOMIKHINA, G. S.

USSR/Electricity - Motors, Induction Jul 50
Torque Characteristics

"Measurement of the Torque of Induction Motors When Starting," Ye. M. Sinel'nikov, Dr Tech Sci, G. S. Somikhina, Cand Tech Sci, Moscow Power Eng Inst imeni Molotov

"Elektrichestvo" No 7, pp 48-53

Analyzes and compares various methods used for measuring starting torque of induction motors. Describes operational principles of electromechanical acceleration meter. Describes circuit for measuring torque with electromagnetic acceleration meter and special galvanometer loop, and recommends criteria for selecting frequency characteristics of recording loop. Includes photograph of meter.

PA 164T17

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6

8(0) SOV/112-59-1-877

Translation from: Referativnyy zhurnal. Elektrotekhnika, 1959, Nr 1, p 117 (USSR)

AUTHOR: Chechet, Yu. S., Astakhov, N. V., Zavriyev, A. S., Somikhina, G. S. and Yuferov, F. M.

TITLE: Electric Motors for Medical-Equipment Drives

PERIODICAL: Materialy po obmenu opytom i nauchn. dostizh. v med. prom-sti, 1957, Nr 5(24), pp 58-62

ABSTRACT: Specific requirements of medical-type electric motors are considered: noiselessness, absence of vibration, normal operation at wide supply-voltage fluctuations, simple and reliable starting, and various other requirements of regulating and starting characteristics. Small motors of the normal NII MEP series are considered unsuitable for medical purposes. A nomenclature and characteristics of special medical-type motors manufactured by the Ministry of Health, USSR, are reported.

L. Ya. L.

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"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6

SOV/144-58-11-5/17

AUTHORS: Somikhina, G. S., (Candidate Technical Sciences, Lecturer)
Pavlov, K. V. (Candidate Technical Sciences, Lecturer)

TITLE: Single Phase Distributed "Sine" Windings for Fractional Horse Power Induction Motors (Odnofaznyye raspredelennyye "sinusnyye" obmotki asinkhronnykh mikrodvigateley)

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Elektromekhanika, 1958, Nr 11, pp 41-56 (USSR)

ABSTRACT: This article deals with winding designs of fractional horse power induction motors, excluding the shaded pole type. The two types of motor of particular interest from the standpoint of winding distribution are single-phase motors in which the auxiliary winding for resistance or capacitance starting is disconnected after starting, and capacitor motors with one or two capacitors which are left in circuit whilst running. The main requirements of single-phase distributed windings are then stated. The initial starting torque must be adequate, there must not be serious diminution in the starting torque at particular speeds as the motor runs up to speed, the windings must be easy to manufacture and must not require additional insulation, as may occur in two layer windings, and finally it is desirable that the span should be short as this helps to keep the size of the end windings down and helps to make the

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SOV/144-58-11-5/17

Single Phase Distributed "Sine" Windings for Fractional Horse Power Induction Motors

machine short. Single-phase distributed windings are then classified into three main types: single layer, two-layer with coils of equal turns and special "sine" windings in which the coils contain an unequal number of turns. Winding diagrams of the three types of winding for a standard series low power motor used with starting resistance type AOLB-11/4 are given in Figs 3a, b and v. It will be seen from the diagrams that in motors in which the auxiliary winding is disconnected after starting, with the usual types of single layer and two-layer windings in order to make the best use of the active materials the auxiliary winding is allotted only a third (or sometimes a quarter) of the total number of slots and two thirds are occupied by the main winding. In capacitor motors in which the auxiliary winding remains connected to the circuit during running, it is advisable to divide the stator slots equally between the two windings. Although single layer windings are easy to make and fill the slots better than two-layer windings, they have the disadvantage of creating marked spatial harmonics in the m.m.f. curve.

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SOV/144-58-11-5/17

Single Phase Distributed "Sine" Windings for Fractional Horse Power Induction Motors

In two-layer windings using a shortened span of one third pole pitch there is no third harmonic in the m.m.f. curve of either the main or the auxiliary winding. In single layer windings the third harmonic disappears because the winding is distributed between two thirds of the total number of slots but its amplitude in the m.m.f. of the auxiliary winding is considerable. It will be seen from Table 1 that with the winding diagrams of Figs 3a and 3b the fifth, seventh and higher harmonics are also present in single layer windings. Recently so-called "sine" windings have come to be used in single-phase fractional horse power induction motors. These windings are so-called because the distribution of the conductors in the slots is such as to ensure that the spatial distribution of m.m.f. is approximately sinusoidal and so therefore, is the induction in the machine air gap. This article does not consider the effect of tooth harmonics on the flux distribution in the air gap. In "sine" windings the conductors of both main and auxiliary windings are distributed between all the slots on the stator circumference. An advantage of the "sine" type winding is that all the coils of each of the windings are in one layer only, and it is preferable to

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SOV/144-58-11-5/17

Single Phase Distributed "Sine" Windings for Fractional Horse Power Induction Motors

keep the starting winding in the upper layer. It is, of course, difficult to make coils with different numbers of turns but there are advantages that fully compensate for this. A winding diagram of a "sine" winding for a motor type AOLB-11/4 is given in Fig 3a . The principal theoretical assumptions in designing "sine" windings for single-phase fractional h.p. induction motors are then considered. An ideal sine-wave distribution of conductors around a stator surface is of course impracticable. However, as will be seen from the diagrams in Fig 5, several approximations are possible that improve the m.m.f. wave shape and the most favourable is a trapezoidal distribution of conductors, as shown in Fig.6. The presence of slots naturally complicates the distribution, nevertheless, the conductors can be distributed in the slots in such a way that the m.m.f. curve is practically sinusoidal. With ordinary distributed windings simple formulae are available for calculating the amplitude and winding factors of higher harmonics but the matter is much more complicated in

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Single Phase Distributed "Sine" Windings for Fractional Horse Power Induction Motors

special "sine" windings with different numbers of turns. Curves of the spatial distribution of m.m.f. are then derived, see Figs 7a and 7b. Selection of the best distribution of conductors in the slots is then considered. Various cases of conductor distribution in the slots are considered with reference to Figs 9, 10, 11, 12 and 13. The m.m.f. curve approximates most closely to a sine-wave when the distribution is trapezoidal as shown in Figs 12 and 13. The best distribution is one in which the third harmonic is absent and the fifth and seventh are small. The necessary winding condition is expressed as a formula and Appendices 1 and 2 consider the application of the conditions to particular examples. The method of obtaining the m.m.f. distribution is then explained. The procedure of designing "sine" windings is then described. Table 2 gives pole pitch values for various numbers of poles and slots. The table is examined and winding conditions are deduced. The initial data required for the design of "sine" windings are then listed, and the order in which the various design steps should be made

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"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6

SOV/144-58-11-5/17

Single Phase Distributed "Sine" Windings for Fractional Horse Power Induction Motors

is described. Winding factors for "sine" windings are given in Table 3. There are 16 figures, 3 tables and 3 Soviet references.

ASSOCIATION: Kafedra elektricheskikh mashin Moskovskogo energeticheskogo instituta (Chair for Electrical Machinery, Moscow Power Institute)

SUBMITTED: October 31, 1958.

Card 6/6

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6

Somikhina, G.S.

6

S/105/60/000/05/25/028
E007/E008

AUTHORS: Andrianov, V.N., Astakhov, N.V., Gubenko, T.P., Kostenko, M.P., Larionov, A.N., Lopukhina, Ye.M., Petrov, G.N., Somikhina, G.S., Tuferov, F.M., Chilikin, M.G.

TITLE: Yu.S. Chechet (Deceased)

PERIODICAL: Elektrichestvo, 1960, No. 5, p. 89

TEXT: Yuriy Sergeyevich Chechet, Professor at the Moskovskiy energeticheskiy institut (Moscow Institute of Power Engineering), scientist and pedagogue, and an expert in the field of electrical micromachines, died on February 26, 1960. He was born on February 2, 1894. He studied at the mekhanicheskiy fakul'tet Kiyevskogo politekhnicheskogo instituta (Department of Mechanics at the Kiyev Polytechnic Institute) from 1913 to 1919. From 1919 teaching activity in Odessa and in Moscow. In 1923 he graduated from the elektrotekhnicheskiy fakul'tet Moskovskogo vysshego tekhnicheskogo uchilishcha (Department of Electrical Engineering at the Moscow Higher Technical School). He published about 40 scientific studies. From 1931-1942 Director of the kafedra elektricheskikh mashin (Chair for Electrical Machines) at the Moskovskiy institut

Card 1/2

mekhanizatsii i elektrifikatsii sel'skogo khozyaystva (Moscow Institute of the Mechanization and Electrification of Agriculture). From 1942 until his death he was Professor at the kafedra elektricheskikh mashin Moskovskogo energeticheskogo instituta (Chair for Electrical Machines at the Moscow Institute of Power Engineering). At the same time he directed a chair at the Voyenno-inzhenernaya Krasnoznamennaya akademiya im. Kuybysheva (Military "Red Banner" Engineering Academy imeni Kuybyshev) for a number of years. He took his doctor's degree in 1940. He wrote his dissertation on "Theoretical Principles for the Designing of Universal Micrometers" ("Teoreticheskiye osnovy proyektirovaniya universal'nykh mikrodvigateley."). He was a Deputy of the Mossovet (Moscow Soviet of Workers' Deputies) and holder of the Order of Lenin and a number of medals, as well as Chairman of the Section Electrical Machines of the MDNTOE. There is 1 figure.

Card 2/2

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"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6

PHASE I BOOK EXPLOITATION SOV/5639

Lopukhina, Yelena Moiseyevna, and Galina Sergeyevna Somikhina

Raschet asinkhronnykh mikrodvigateley odnofaznogo i trekhfaznogo toka (Design of Single- and Three-Phase Induction Micromotors) Moscow, Gosenergoizdat, 1961. 312 p. 17,000 copies printed.

Ed.: L.M. Petrova; Tech. Ed.: G. Ye. Larionov.

PURPOSE: This book is intended as a textbook for students of electrical and power engineering in schools of higher education. It may also be useful for technical personnel designing micromotors.

COVERAGE: The book presents the basic problems in designing micromotors with three- or single-phase squirrel-cage rotors. Fundamentals and elements of electromagnetic and thermal calculations, as well as special structural features of induction micromotors, are reviewed. The authors recommend

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"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6

the adoption of uniform methods of selecting basic dimensions and a single calculation pattern for all types of three- and single-phase motors. Calculation formulas and materials based on recent data required for actual calculations are given. Examples illustrate the methods adopted for the calculation of various motors. The book includes the results of investigations carried out over a period of years by the authors at the MEI (Moskovskiy energeticheskiy institut -- Moscow Institute of Power Engineering). They thank G. N. Petrov, Honored Scientist, Professor, Head of the Department of Electrical Machinery, and N. A. Mushketov, Engineer, for their advice, and T. P. Il'ina, Technician, who helped with the manuscript. Chs. 1, 2, 8, and 9 and the appendixes were written by the authors jointly; Chs. 4-7 and 12, and sec. 2, 3, and 5 of Ch. 13 were written by Ye. M. Lopukhina; Chs. 3, 10, and 11 and sec. 4 of Ch. 2, and 1 and 4 of Ch. 13, by G. S. Somikhina. There are 53 references: 31 Soviet, 20 English, and 2 Czech.

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"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6

S/144/62/000/002/006/007
D289/D301

AUTHORS: Pavlov, Kir Veniaminovich, and Somikhina, Galina Sergeyevna, Candidates of Technical Sciences, Docent (see Association)

TITLE: Calculating sinusoidal windings in single phase asynchronous miniature machines

PERIODICAL: Izvestiya vysshikh ucehbnykh zavedeniy. Elektromekhanika, no. 2, 1962, 177 - 188

TEXT: The article gives methods of calculating winding coefficients which are defined as ratios between the amplitude of harmonic mmf to the corresponding amplitudes in an equivalent lumped coil winding, spread exactly over one pole pitch. The author gives a general equation for winding coefficients for an even and odd number of slots per pole and compares the trapezoidal mmf curves with the curves for 'lumped' coil which are rectangular. The general equation for winding coefficient of the νth harmonic is

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"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6

S/144/62/000/002/006/007
D289/D301

Calculating sinusoidal windings ...

$$k_{o\nu} = \frac{f(x_o) + \sum_{x_n} \Delta f(x_n) \cos \nu x_n}{f(x_o) + \sum_{x_n} \Delta f(x_n)} \qquad (8)$$

where $0 < x_n < \pi/2$.

The author considers the most favorable winding distribution. To obtain nearly sinusoidal mmf distribution, 3rd, 5th and 7th harmonics should be eliminated. Equating the above Eq. (8) to zero for a given harmonic a function of the distribution is obtained. In practice the trapezium distribution is often used where 1/3 of the slots/pole is filled with maximum number of conductors, the rest of the slots being filled with less. The author gives formulas for $k_{o\nu}$ for various number of slots/pole and the mmf distribution. Distribution of turns in a coil is considered and also space for auxiliary winding apart from main windings. The author gives calculation of winding impedances, the general formula for reactance of main or

Card 2/3

[illegible] distribution. There are 12 figures, 1 table and 3 Soviet-bloc references.

ASSOCIATION: Kafedra elektricheskikh mashin, Moskovskiy energeticheskiy institut (Department of Electrical Machines, Moscow Power Engineering Institute)

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6"

SUBMITTED: July 11, 1961

Card 3/3

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6

SOMIKHINA, Galina Sergeyevna, kand.tekhn.nauk, dotsent

Choice of the principal dimensions of an asynchronous tachometer generator. Izv. vys. ucheb. zav.; elektromekh. 6 no.8:936-945 '63. (MIRA 16:9)

1. Kafedra elektricheskikh mashin Moskovskogo energeticheskogo instituta.

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6

SOMIKHINA, G.S.

Optimum parameters of an asynchronous tachometer generator. Izv. vys. ucheb. zav.; elektromekh. 7 no.6:688-697 '64. (MIRA 17:7)

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6

SOMIKOV,N.

Progressive methods for training coal miners. Prof.-tekh. obr. 12 no.6:9-10 Je '55. (MLRA 8:9)

1. Starshiy master gornopromyshlennogo uchilishcha no.5 (g. Voroshilov-grad)
(Coal mines and mining--Study and teaching)

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6

SOMI-KOVACS, Tibor, dr.

Possibilities of mass chest screening in therapeutic institutions. Tuberkulozis 17 no.4:104-107 Ap '64.

1. Az Orszagos Koranyi Tbc Intezet (igazgato: Boszormenyi Miklos dr. kandidatus, tudomanyos igazgato: Foldes Istvan dr. kandidatus) kozlemenye.

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"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6

SOMIN, B. KH.

122-3-7/30

AUTHOR: Somin, B.Kh., Candidate of Technical Sciences and Matskevich, S.L., Engineer.

TITLE: Improvement of the Resistance of Stainless Steel against Seizure under Friction with Lubrication. (Povysheniye stoykosti nerzhaveyushchey stali protiv zadiraniya pri trenii so smazkoy)

PERIODICAL: Vestnik Mashinostroyeniya, 1957, No.3, pp. 28 - 34 (USSR).

ABSTRACT: Tests were carried out with the aim of finding the causes of the increased tendency of stainless steels to fail through seizure, of clarifying the part played by the chemical composition of the steel and of developing an effective protection method for stainless steel components against seizure or fretting. The tendency to seize was judged by the strength of the adsorption bond between the lubricant and the steel; seizure being the breakdown of this bond under conditions of boundary lubrication. Methods based on the wetting angle and on the study of metal transfer by means of radio-active isotopes did not give satisfactory results. The direct determination of the seizure load was carried out in an Amsler machine under various loads with a constant duration of the test accompanied by a

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Ca ... friction but ... The chromium content

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5(2);25(1) PHASE I BOOK EXPLOITATION SOV/2313

Akademiya nauk SSSR. Institut mashinovedeniya

Povysheniye stoykosti detaley mashin /sul'fidirovaniye/; sbornik statey (Increasing the Wear Resistance of Machine Parts /Sulfurization/; Collection of Articles) Moscow, Mashgiz, 1959. 126 p. Errata slip inserted. 4,500 copies printed.

Ed. (Title page): M. M. Khrushchov, Doctor of Technical Sciences; Ed. (Inside book): A.G. Nikitin, Engineer; Tech. Ed.: V.D. El'kind; Managing Ed. for Literature on General Technical and Transport Machine Building (Mashgiz): K.A. Ponomareva, Engineer.

PURPOSE: This collection of articles is intended for engineering and technical workers of machine-building and overhauling plants.

COVERAGE: This book presents results of investigations of methods to increase the resistance of machine parts to seizure. A new method of sulfurization which improves the friction behavior of cast iron and steel and an analysis of the effect of sulfurization on the antifriction properties and wear of metal are given.

Card 1/6

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"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6

These articles are the transactions of a seminar held at the Institute of Mechanical Engineering of the Academy of Sciences, USSR, in December 1956.

TABLE OF CONTENTS:

D'yachenko, P. Ye., Doctor of Technical Sciences. Use of Sulfurization in Czechoslovakia 5
The author reviews the development and introduction of sulfurization in several Czech plants. The process and its advantages are described.

Vinogradov, Yu. M., Candidate of Technical Sciences. Properties of Metals Following Thermochemical Sulfurization 11
The author describes investigations of sulfurization and other similar treatment carried out at the NIIKhIMMASh (Scientific Research Institute of Chemical Machinery) and gives formulas for the bath used, methods of operation, and results obtained.

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"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6

Vaynshteyn, V.E., and Yu. M. Vinogradov, Candidates of Technical Sciences. Investigating Wear of Sulfurized Metal Surfaces by Means of Radioactive Isotopes 30

The authors describe an investigation carried out by the NIIKhIMMASh (Scientific Research Institute of Chemical Machinery), in which isotope S^{35} was used to determine the distribution of sulfur in the metal.

Somin, B.Kh., Candidate of Technical Sciences, and Ye. V. Gorbachevskiy, Engineer, Sulfocyanation as a Means of Increasing Resistance to Seizure 44

The authors describe the combined process of sulfurization and cyanation of surfaces. The mechanism and the role of both of these processes in the combined process is given.

Dombrovskaya, N.S., Doctor of Chemical Sciences, Ye. A. Alekseyeva, and N.V. Khakhlova, Engineers. Selecting Salt Baths for Sulfurization of Iron Alloys 62

The authors recommend the use of a salt bath as the most controllable and uniform method of sulfurization. They develop the compositions of these baths and the optimum

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"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6

temperatures of operation.

Zinovich, N.S., Engineer. Investigation of the Sulfurization Process 79
The author discusses sulfurization in the liquid bath, baths operating at medium and low temperatures, control of the process, x-ray and metallographic investigations, hardness, work-in, and wear resistance tests.

Zelenova, V.D., Engineer. X-ray Analysis of the Surface Layer of Sulfurized Specimens 95
The author investigated various bath compositions by x-ray analysis in order to evaluate the character of sulfurization in respect to simultaneous formation of nitrades.

Gil'man, T.P., Engineer. Sulfurization of Iron Carbide With Gas 99
The author describes a process in which a sulfur suspension in mineral oil and ammonia are introduced together into the furnace. This process is a combined sulfurizing and cyaniding process having several advantages in comparison

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"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6

Sulfurization in Manufacturing Agricultural Machinery 115
In this article the author presents the results of laboratory and bench tests of sulfurized and nonsulfurized machine parts carried out by RISKhM (Rostov Institute for Agricultural Machinery) and ROSTSEL'MASh.

Blokhin, M.A., P.S. Nesterenko, and I.T. Shuvayev. X-ray and Spectrum Analysis of Sulfurized Samples 121
The author describes an investigation of depth distribution of sulfur in type 45 steel and gray cast iron sulfurized at the ROSTSEL'MASh.

Lesnykh, D.S., Candidate of Chemical Sciences. Electrosulfurization 126
The author presents the results obtained from sulfurizing parts in various molten salts at 240 to 270°C and in aqueous solution of salts and 50 to 75°C using electrolytic methods.

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"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6

PHASE I BOOK EXPLOITATION SOV/3948

Akademiya nauk SSSR. Institut mashinovedeniya

Treniye i iznos v mashinakh; sbornik XIV (Friction and Wear in Machinery; Collection of Articles, no. 14) Moscow, Izd-vo AN SSSR, 1960. 333 p. Errata slip inserted. 3,000 copies printed.

Resp. Ed.: M. M. Khrushchov, Doctor of Technical Sciences, Professor; Ed. of Publishing House: V. A. Giryayeva; Tech. Ed.: G. A. Astaf'yeva; Editorial Board: Ye. M. Ost'yar, Doctor of Technical Sciences, Professor; A. K. D'yachkov, Doctor of Technical Sciences, Professor; I. V. Kragel'skiy, Doctor of Technical Sciences, Professor; A. D. Kuritsyna, Candidate of Technical Sciences; L. Yu. Pruzhanskiy, Candidate of Technical Sciences; and M. M. Khrushchov, Doctor of Technical Sciences, Professor.

PURPOSE: The book is intended for scientific research workers and designers in the machine industry.

COVERAGE: The recent works of Soviet scientists on the subject of friction and wear in machinery are presented. Problems discussed include abrasive wear, the real area of contact surface, wear resistance and antifriction properties of some bronze and brass materials, the effect of hot jets of gases on surface layers of steel, and seizure and movements of journals in bearings. Brief biographical sketches and bibliographies of the works of Ye. M. Shvetsova, V. F. Lorents, and L. V. Velin are presented. Bibliographies on friction, wear, and lubrication for 1956 and 1957 compiled by Ye. O. Vil'dt are also presented. References accompany several of the articles.

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Semin, N.Kh., and S.L. Matskevich. Resistance of Stainless Steels to Seizure During Friction With Lubrication 185

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PHASE I BOOK EXPLOITATION SOV/4893

Vsesoyuznoye soveshchaniye po fizike, fiziko-khimicheskim svoystvam ferritov i fizicheskim osnovam ikh primeneniya. 3d, Minsk, 1959

Ferrity; fizicheskiye i fiziko-khimicheskiye svoystva. Doklady (Ferrites; Physical and Physicochemical Properties. Reports) Minsk, Izd-vo AN BSSR, 1960. 655 p. Errata slip inserted. 4,000 copies printed.

Sponsoring Agencies: Nauchnyy sovet po magnetizmu AN SSSR. Otdel fiziki tverdogo tela i poluprovodnikov AN BSSR.

Editorial Board: Resp. Ed.: N. N. Sirota, Academician of the Academy of Sciences BSSR; K. P. Belov, Professor; Ye. I. Kondorskiy, Professor; K. M. Polivanov, Professor; R. V. Telesnin, Professor; G. A. Smolenskiy, Professor; N. N. Shol'ts, Candidate of Physical and Mathematical Sciences; E. M. Smolyarenko; and L. A. Bashkirov; Ed. of Publishing House: S. Kholyavskiy; Tech. Ed.: I. Volokhanovich.

PURPOSE: This book is intended for physicists, physical chemists, radio electronics engineers, and technical personnel engaged in the production and use of ferromagnetic materials. It may also be used by students in advanced courses in radio electronics, physics, and physical chemistry.

COVERAGE: The book contains reports presented at the Third All-Union Conference on Ferrites held in Minsk, Belorussian SSR. The reports deal with magnetic transformations, electrical and galvanomagnetic properties of ferrites, studies of the growth of ferrite single crystals, problems in the chemical and physicochemical analysis of ferrites, studies of ferrites having rectangular hysteresis loops and multicomponent ferrite systems exhibiting spontaneous rectangularity, problems in magnetic attraction, highly coercive ferrites, magnetic spectroscopy, ferromagnetic resonance, magneto-optics, physical principles of using ferrite components in electrical circuits, anisotropy of electrical and magnetic properties, etc. The Committee on Magnetism, AS USSR (S. V. Vonsovskiy, Chairman) organized the conference. References accompany individual articles.

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Bashkirov, L. A., A. P. Falkin, and N. N. Sirota. Investigation of the Magnetic Properties of the Ternary System $NiFe_2O_4-MgFe_2O_4-ZnFe_2O_4$ 183

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"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6

S/181/60/002/007/045/047/XX
B006/B067

AUTHORS: Latsh, V. V., Minayev, N. G., Somin, B. Kh.

TITLE: X-Ray Study of the Phase Composition of Ni-Zn Ferrites by Using CoK_α Radiation

PERIODICAL: Fizika tverdogo tela, 1960, Vol. 2, No. 7, pp. 1632-1642

TEXT: The use of the emission of an iron anticathode for analyzing the phase of Ni-Zn ferrites proved to be inadequate since it renders the determination of NiO or of the solid solution of ZnO in NiO difficult or impossible because the lines of NiO and the spinel coincide. If harder (monochromatized) $Co-K_\alpha$ radiation is used, this disadvantage is not observed; the X-ray pictures show two additional intensive interference lines of NiO with the indices (133) and (420), and the Bragg angles 69° and 74°, respectively. An X-ray tube of the type БСВ-4 (BSV-4) (time of exposure 10 hours; 10 ma, 35 kv) was used for taking the Debye powder patterns. Mixed oxides with an NiO:ZnO ratio of 0.35 - 1.1 and an Fe_2O_3 content of 45-55.0 mole% were studied. By means of $Co-K_\alpha$ radiation, interference lines could also be observed at the following concentrations:

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NiO (0.5 wt%), ZnO (2.0 wt%), Fe_2O_3 (2.0 wt%). The results of the investigations are illustrated by means of X-ray diagrams, tables, and microstructural pictures, and they are summarized as follows: 1) With Co-K_α radiation NiO or ZnO can be determined in Ni-Zn ferrites and NiO, respectively by means of interference lines. 2) During the ferritization process, in the case of stoichiometric composition, no formation of solid ZnO solutions in NiO was observed. The formation of Zn ferrite in the synthesis from oxides ceases at a temperature of 900°C, the ferritization of nickel ferrite ceases at 1100°C. 3) A rise of the annealing temperature of ferrite mixtures with a low content of iron oxide over 900°C leads to a substitution reaction between the excess NiO and the Zn ferrite which brings about a change in the ratio between divalent Ni and Zn ions in the ferrite lattice. 4) Zinc oxide and nickelous oxide form solid substitution solutions with conservation of the Ni-O crystal lattice; the lattice parameter practically increases linearly with increasing ZnO content (see Fig 3 and Table 3). The solubility limit of ZnO and NiO amounts to about 50 wt% at an annealing temperature of 1350°C. If this temperature is reduced to 900°C the solubility limit of ZnO is reduced to ~30 wt%. A change in the solubility of ZnO in NiO could not be observed on a further

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X-Ray Study of the Phase Composition of Ni-Zn Ferrites by Using COK_{α} Radiation S/181/60/002/007/045/047/XX B006/B067

temperature increase; this is connected with the strong decrease of the diffusion rate. 5) In Ni-Zn ferrites with less than 50 mole% of Fe_2O_3, NiO and ZnO excesses exist which form solid solutions. The formation of a solid ZnO solution in NiO was observed after the termination of zinc ferritization. B. Ye. Levin is mentioned. There are 8 figures, 3 tables, and 11 references: 9 Soviet and 1 US.

SUBMITTED: July 22, 1959

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84082
S/181/60/002/009/023/036
B004/B056

9,2571

AUTHORS: Latsh, V. V., Minayev, N. G., Somin, B. Kh., Stepina, N.E.

TITLE: Dissolution of Excess Iron Oxide in Ni-Zn Ferrite

PERIODICAL: Fizika tverdogo tela, 1960, Vol. 2, No. 9, pp. 2191 - 2198

TEXT: For the purpose of explaining the contradictory published data concerning the solubility of Fe_2O_3 in ferrites, the authors carried out the following experiments: Ni-Zn ferrites with a content of 50-95 mole% Fe_2O_3 and an NiO/ZnO ratio of from 0.43 to 4.0 were synthetized from the oxides, were briquetted after the addition of polyvinyl alcohol as a binding agent, annealed for 4 h at 1000-1350°C, after which they were either slowly cooled (100°C/h) in a furnace or quenched with air or water. Besides, they were also slowly cooled under oxygen deficiency (0.7 to 0.35 torr). Fig. 1 shows the results obtained by chemical analysis: The quantity of Fe_2O_3 converted into magnetite as a function of the Fe_2O_3 content and the cooling conditions; Fig. 2 shows the quantity

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Dissolution of Excess Iron Oxide in Ni-Zn Ferrite

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of Fe_2O_3 converted into magnetite as a function of the annealing temperature. The quenched samples were found to have the highest magnetite content. The Fe_2O_3 excess dissociates to form magnetite, and together with the ferrite it forms solid solutions of iron-nickel-zinc ferrite of stoichiometric composition. When slowly cooled in air, the magnetite is oxidized to γ-Fe_2O_3 or α-Fe_2O_3. The latter separates as the second phase. Figs. 3-6 (microphotographs) confirm this process. The quenched samples form a homogeneous phase, while the slowly cooled samples have two phases because of the separation of hematite. X-ray analysis (Fig. 7) shows that the lattice constant of quenched samples approaches that of magnetite (8.38 kX), whereas Fe_2O_3 formed by oxidation reduces the lattice constant (8.32 kX at 100 mole% Fe_2O_3). Fig. 8 shows the temperature of the dissociation of Fe_2O_3 to Fe_3O_4, as a function of the Fe_2O_3 content. For pure Fe_2O_3, the dissociation temperature is 1450°C, and in the system

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Dissolution of Excess Iron Oxide in Ni-Zn Ferrite

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Ni-Zn-ferrite - Fe_2O_3, it approaches the value of 900°C with decreasing iron-oxide excess. There are 8 figures and 23 references: 11 Soviet, 4 US, 2 British, 3 German, and 1 French.

SUBMITTED: October 26, 1959

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"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6

S/711/60/014/000/007/013
D262/D301

11.9000

AUTHORS: Somin, B.Kh., and Matskevich, S.L.

TITLE: Tear resistance of stainless steels in friction with lubrication

SOURCE: Akademiya nauk SSSR. Institut mashinovedeniya. Treniye i iznos v mashinakh, v. 14, 1960, 185 - 201

TEXT: Experiments were conducted to reveal reasons for the tendency of stainless steels to tear, and to work out effective methods of prevention. Critical loads (or tear loads) were determined by the testing of a series of pairs 'block-roller' on Amsler's machine, at various loads, from 5 to 200 kg, and at constant duration of tests (2000 revs). Friction moments were recorded. The behavior of carbon and stainless steels were compared during friction with and without lubrication, to determine the effect of the chromium content in steel on the size of the tear load on friction with lubrication and to establish the effect of some methods of surface treatment of stainless steels on the size of the tear load. It was concluded that: 1) The main reason for the increased tendency of stainless

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steel to tear at friction with lubrication is its reduced ability to retain lubricants on its surface. 2) Addition of chromium reduces the ability of the surface to adsorb the lubricant; with high chromium contents the tear load is 10 - 20 times less than at low chromium contents. 3) The increased tear load of stainless steel can be obtained by sand blasting and then treating the sand blasted surface with lubricant adsorbing coatings, usually on a polyvinyl basis; adhesive BF-2 (BF-2), polymerized at 140 - 160°C is considered to be the best. 4) Lacquer coatings permit one to retain the effectiveness of parts until fully worn off. There are 9 figures, 4 tables and 13 references: 6 Soviet-bloc and 7 non-Soviet-bloc. The 4 most recent references to the English-language publications read as follows: E. Rabinowicz, Physics of Lubrication, British J. of Appl. Physics, Suppl. no. 1, 1951, p. 82; Burwell et al., Metal Progress, v. 60, 1951, p. 69; F. Barwell and A. Miln, Physics of Lubrication, British J. of Applied Physics, Supp. no. 1, 1951, p. 39; F.P. Bowden and D. Tabor, Friction and Lubrication of Solids, Oxford, 1950, p. 176.

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ACCESSION NR: AR4018314 S/0137/64/000/001/G036/G036

SOURCE: RZh. Metallurgiya, Abs. 1G251

AUTHOR: Somin, B. Kh.; Gorbachevskiy, Ye. V.; Latsh, V. V.; Minayev, N. G.

TITLE: The influence of nickel on the sinterability of pressed powders of tungsten and molybdenum

CITED SOURCE: Tr. Kuyby*shevsk. aviats. in-t, vy*p. 16, 1963, 141-148

TOPIC TAGS: powder metallurgy, nickel, tungsten, molybdenum, material strength, heat-treatment

TRANSLATION: Research was conducted on the influence of Ni on sintering in an atmosphere of H_2 and in vacuum Mo and W in a range of 1,100-2,000 degrees for Mo and 1,100-2,500 for W, with a nickel content of 0.01-10% by weight. Density (P), microstructure, microhardness, and the parameters of the crystal network of the first phase were studied. An increase in the density of the sintered Mo with an inclusion of 0.5-1% Ni takes place as low as 1,100 degrees. At 1,300 degrees, the porosity of the samples with the above nickel content amounts to 10%. At 1,500 degrees, the effectiveness of the influence of small inclusions of Nickel on the sinterability

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of Mo decreases considerably. The curves of function P of sintered W with the nickel content has a maximum equal to a 0.25% nickel content. After sintering at 1,500 degrees, the W with an admixture of 0.25-0.5% nickel amounts to 5-7%. The inclusion of nickel also leads to an increase in the microhardness of W from 250 to 600 kg/sq cm, and the microhardness of Mo from 150 to 500 kg/sq cm. The liquifiability of nickel at 1,500 degrees is 0.3 atmospheric % in W and 1 atmospheric % in Mo. At sintering temperatures of 1,350 degrees for Mo, and 1,495 degrees for W, and a nickel content greater than 0.5% for Mo and 0.25% for W, an oozing out of the Nickel phase is observed, accompanied by a decrease in hardness of the samples during sintering in H_2.

SUB CODE: MM ENCL: 00

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PROCESSES AND PROPERTIES INDEX

Nonmagnetic cast iron. V. S. Meskin and [illegible] Sonin. Russ. 31,951, Sept. 30, 1933. The cast iron contains Mn 6.9, Cu 3.5, C 3.5 and Si 2.4%.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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Nonmagnetic manganese steel. V. S. Meskin, B. F. Sonin and Yu. M. Margolin. Russ. 33,547, Dec. 31, 1933. Nonmagnetic Mn steel composed of 15-22% Mn and up to 1% C is characterized by the introduction of 0.5-1% Si and 1-4% Cu.

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Nonmagnetic cast iron. V. S. Mes'kin and B. E. Somin. *Repts. Inst. Metals* (Leningrad) No. 14, 13-33 (in German 34-6, 1933). - A resume of an extensive investigation of the prepn. of nonmagnetic cast iron (not contg. Ni). This is prepd. in 3 grades having the following compns.: (1) for small and medium-size castings, C 3.4-3.7, Si 2.5-3, Mn 7-9, Cu 1.5-2 and P 0.5-0.7%; (2) for large castings, C 3.4-3.7, Si 2.5-3, Mn 9-11, Cu about 1 and P 0.5-0.7%; (3) for rheostats (of medium and large size) Mn content varies between 7-8%. Magnetic permeability of the above products varies between 1.1 and 1.5, sp. elec. resistance between 160 and 220 microhms, resistance to bending 22-30 kg. per sq. cm. at a radius of bend 8-16 mm. The microstructure should consist of austenite and graphite; martensite and carbides should be absent, as these increase magnetic permeability, decrease elec. resistance and render the metal less machinable. Graphitization should be carried out during casting, so the graphite is obtained in the form of interconnecting veins. The nonmagnetic cast iron is a finished product after casting and does not require any heat treatment. The Si aids graphitization, but it should not be used in greater amts. than indicated above. Cu aids in the formation of austenite and increases its stability during cooling, but it interferes with graphitization, rather than aiding it, as was hitherto assumed. P increases magnetic permeability, but is used here to lower the m. p. of the Fe. Owing to the vein-like graphite structure, this cast iron could be used as nonmagnetic wrought iron. In this case the thermal treatment should consist in heating for 3-4 hrs. at 1000° and then cooling in air. S. L. Madorsky

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Austenite steels. I. Material for cable armor. V. S. Mes'kin, B. E. Somm and Vu. M. Margolin. *Repts. Inst. Metals* (Leningrad) No. 15, 97-[illegible] (1933). —Thirteen kinds of austenite steel were investigated for their mech., magnetic, elec. and technological properties, with the view of using them for drawing wire for cable armor. The compns. of the steels were as follows: Mn steel, C 0.32-0.42 and Mn 13.15-18.[illegible]; Mn Cu steel, C 0.[illegible]-0.[illegible], Mn 14.0-20.0 and Cu 1.0-2.0; Ni steel, C 0.26 and Ni 24.12; Ni-Mn steel, C 0.[illegible], Mn [illegible] and Ni 15.0; Cr Ni steel, C 0.2[illegible], Cr 18.0 and Ni 18.0; Cr Mn steel, C 0.33, Mn 7.0 and Cr 18.0; Cr Mn Cu steel, C 0.33, Mn 7.0, Cr 18.0 and Cu 1.0; Mn Si steel, C 0.[illegible]-0.65, Mn 17.0-18.73 and Si 1.0-2.0%. The magnetic permeability of the steels varied between 1.0[illegible] and 1.[illegible] and remained const. up to a certain temp. of tempering, ranging between 800° and 1100°, above which it increased. This is explained on the basis of a partial change of austenite into magnetite, under the influence of thermal strains. The sp. resistance varied between 70 and 90 microhms. A gradual decrease of resistance took place with increase of temp. of tempering. The Mn, Mn Cr and Mn Si steels did not offer any more difficulties in wire drawing than ordinary C steel. Steel contg. 14% Mn and Ni steels can be drawn into wire only after homogenization, i.e., heating to remove dendritic segregation. The Cr Ni, Cr Mn and Cr Mn Cu steels could not be drawn at all. The other steels were drawn cold. Steel analyzing C 0.[illegible], Mn 20 and Cu [illegible] was found most suitable for cable armor. S. L. M.

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BC

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

3RD AND 4TH ORDERS

B-I-5

Nickel-aluminium steel "MK." V. S. [illegible], B. E. [illegible], and J. M. [illegible] (Repts. Centr. Inst. Met., 1934, No. 16, 60—70; cf. B., 1935, 300).—The steel contains Ni 10—40, Al 1—20, C < 1·5, Mn < 10, Cr < 5, Co < 40, and W < 8%. It cannot be forged. Its magnetic properties depend on its treatment. It is annealed at [illegible]° to obtain structural stability. The increase in magnetic properties is due to formation of a compound of Ni, Al, and Fe, which separates out as a white phase on etching in EtOH-HNO_3. The highest coercive force, at a moderate residual magnetism, corresponded to a particle size of the white phase below microscopical visibility. The optimum composition was Ni 25, Al 10%. Metals other than Ni and Al help in fixing the supersaturated solid solution in a state of very fine dispersion.

Ch. Abs. (e)

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PROCESSES AND PROPERTIES INDEX

Austenite manganese steel that can be machined. V. S. Mes'kin and B. F. Somin. *Kachestvennaya Stal* 1935, No. 7, 15-22. *Chem. Zentr.* 1936, I, 4356-7. Investigations are reported on the influence of Al, Cu and other metals on the machinability as well as the mech., magnetic and elec. properties of austenite Mn steel. The addn. of Al greatly increases the ease with which this steel can be worked although the ability to acquire greater hardness by cold working is reduced. The addn. of Cu improves the mech. properties without influencing the ease of working or machining. A steel contg. C 0.4, Mn 14, Al 3 and Cu 2-3% is recommended as a substitute for Ni-contg. nonmagnetic types of steel. M. G. Moore

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PROCESSES AND PROPERTIES

M

***A Study of Iron Carbon–Aluminium Alloys.** B. E. Semin, N. N. Lipchin, and Yu. M. Margolin (*Kachestv. Stal* (*Alloy Steels*), [illegible] (9), 22-27).—[In Russian.] Alloys were prepared containing 0·05-1·2% carbon and 4-16% aluminium, and their structure, hardness, electrical resistance, and magnetic properties were studied. The results are given in a long abstract in *C. Abs.*, 1936, **30**, 5922.—N. B. V.

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CA

Magnetostriction of alloys V. S. Mes'kin, B. F. Somin and A. S. Nekhamkin. *J. Tech. Phys. (U. S. S. R.)* 11, 918-35(1941).—The magnetostriction (α) defined as $10^6 \times \Delta l/l$, where l = length, is measured in terms of magnetic field intensity H up to 2000 oersteds, with the aid of an interferometric device. The alloys were either annealed at 900° and cooled in the furnace, or quenched in water from 1100° (or a higher temp.); some samples were tempered. (1) Ni-Be alloys: α is neg.; with increasing concn. of Be, α of annealed alloys corresponding to magnetic satn. decreases markedly, from −35.5 for pure Ni to −11.5 for an alloy with 2% Be. Quenching causes α of the 1% Be alloy to increase slightly; however, with the heterogeneous 1.5% and 2% Be alloys, α decreases markedly on quenching (from 1100°). Tempering at 550° (2 hrs.) of the quenched 2% alloy causes α and the satn. to exceed the values shown by the annealed alloys. (2) Fe-Mo alloys: in terms of the magnetic field H, the magnetostriction α first rises to a pos. max., then drops to neg. values. The behavior of the annealed alloys is similar to that of pure Fe. The Villari point disappears at 8% Mo: the magnetostriction is pos. throughout. The Villari point reappears for the annealed alloys beyond the soly. limit (above 12% Mo); for the quenched alloys α remains pos. after the drop from the max., the curve lying above that of the corresponding annealed alloys. (3) Fe-W alloys: in the annealed state, the shape of the curves is the same as of those for the Fe-Mo alloys; increased heterogeneity leads to diminution of the neg. part of the striction curve as compared with pure Fe. Tempering of the alloys, amounting to soln. of the Fe_3W_2 phase, shifts the Villari point to stronger fields and displaces the α-curves upward. (4) Fe-P alloys: similar behavior to the foregoing system. (5) Fe-Ti alloys: investigated only in the annealed state; same behavior. (6) Fe-Al alloys: α becomes neg. in the case of 4% Al alloys, from 800 oersteds up; above 6% Al, the magnetostriction is pos. throughout; quenching lowers the α-curves relative to those of the annealed metals. (7) Fe-Si alloys: up to 4% Si, the α-curves shift upward with increasing concn. of Si, the Villari point disappears; the behavior is similar to that of the Fe-Al alloys below 14% Al. Further increase of the Si content leads to a decrease of α. At 6% Si, a neg. branch appears at low H; at 7% Si, the magnetostriction is neg. throughout. (8) As a rule, for all the alloys investigated, increase of the concn. of the solid soln. in the alloy results in an upward shift of the α-H curve, that is neg. values of α diminish (in the case of Ni alloys) and come nearer to zero, pos. values are raised (in the case of Fe alloys). (9) There is no general relationship between the behavior of α and that of the coercive force and magnetic satn. of the same alloys, except in the cases where the change of intensity of satn. reflects the formation and decompn. of solid solns. (10) Magnetostriction is highly sensitive to superstructure: appearance of the latter enhances α; superstructure accounts for the behavior observed on Fe-Si alloys. Magnetostriction can thus serve as a sensitive detector of superstructure in ferromagnetic alloys. (11) Fe-Al alloys show abs. values of α and a dependence of α on H comparable to those of Ni and may therefore be of interest for application in magnetostriction vibrators. N. Thon

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

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SOMIN, B. Ye. PA 58T83

USSR/Metals Jul 1947
Annealing
Steel, Nickel

"The Effect of the Additions of Aluminum and Boron on the Annealing Quality of Steel," B. Ye. Somin, Candidate Tech Sci, 5 pp

"Stal'" No 7 - 630-636

Effect of small additions of aluminum on annealing quality of steel depends on type, e.g., it is particularly noticeable on nickel steel. Individual effect of boron, which is derived either from boron anhydride or ferroboron, is essentially different from effect of complex additions, introduced in amounts equal to amounts of boron.

58T83

Evaluation B-58884

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PROCESSES AND PROPERTIES INDEX

A

Q

9-122. Method for Determining the Depth of Annealing of a Deep Hardening Structural Steel. B. F. Somin. *Factory Laboratory (U.S.S.R.)*, v. 13, July 1947, p. 832-840. (In Russian.)

Results obtained with new specimens are charted and tabulated and compared with those from other types of specimens. Results are claimed to be more reliable with the new specimens. Data for several Soviet steels, the compositions of which are furnished.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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SOMIN, I.N.

Reactions of aliphatic diazo compounds with unsaturated compounds. XVII. Reaction of diazoacetic ester with esters of unsaturated acids and with mesityl oxide in the presence of copper catalysts. I. A. D'yakonov, I. N. Somin, and M. I. Komendantov (Leningrad State Univ.). *Zhur. Obshchei Khim.* 23, 1641-50(1953); cf. *C.A.* 44, 1014a, 48, 3318i.—To 1230 g. mesityl oxide and 4 g. $CuSO_4$ at reflux was added slowly 400 g. N_2CHCO_2Et and 260 g. mesityl oxide mixt. at 130-40°; after completion of N evolution the cooled and filtered mixt. was distd., yielding 1230 g. mesityl oxide, and 530 g. distillate, b_7 61-$b_{4.5}$ 145°. Fractionation gave 5.4% Et glycolate, and 50.6% material, $b_{0.5}$ 105-15°, n_D^{20} 1.4701-1.4711, which had the compn. $C_{11}H_{18}O_4$, and on alk. hydrolysis gave some $HOCH_2CO_2H$ and a solid acid (I), $C_{11}H_{18}O_4$, m. 110°. The latter may be $Me_2C{:}CH\overline{CMe_2.O.C(CH{:}CMe_2)Me_2.O.CHCO_2H}$ or $\overline{O.[CMe(CH{:}CMe_2)]_2.O.CHCO_2H}$. The bulk of the reaction products was not identified. A fraction, b_1 60-4°, d_{20} 1.002, n_D^{20} 1.4482, apparently $C_{10}H_{18}(OH)_2$, was saponif. with 10% NaOH 1 hr. at reflux, yielding Me_2CO and *trans-1,3-dimethyl-2-acetylcyclopropanecarboxylic acid*, m. 108-10°; its *Ag salt* was isolated. The acid with NaOBr in the cold gave 80-5% $Me_2C.CH(CO_2H).CHCO_2H$, m. 211°, indicating the trans configuration. I does not hydrogenate over Raney Ni; over Pt it does add H, but slowly, yielding an oily product. I reacts slowly with *2,4-(O.N)$_2$C$_6$H$_3$NHNH$_2$*, yielding a *hydrazone*, m. 180-1°, which was not analyzed. I does not react with AcOH or hot aq. EtOH, but with hot 2% H_2SO_4 it yields Me_2CO and an *isomeric acid*, m. 168°, which was not identified. Oxidation of I with cold 2% $KMnO_4$ gave Me_2CO, AcOH, and a reddish sticky acid whose *Ag salt* was prepd.; this contained 43.8% Ag. If the original reaction is carried out with more rapid mixing of the reagents the main bulk of the products approaches the compn. $C_{10}H_{16}O_4$. Et *trans*-crotonate (80 g.) and 40 g. N_2CHCO_2Et with 0.5 g. $CuSO_4$ as above gave 63.0 g. unchanged crotonate 53% di-Et fumarate, and some 20 g. polymer. Reaction with $CH_2{:}CMeCO_2Me$ gave only a polymer. G. M. K.

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5.3400

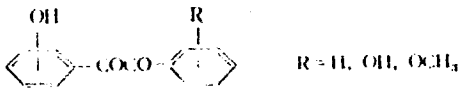
77291
SOV/63-4-6-25/37

AUTHORS: Somin, I. N., Kuznetsov, S. G.

TITLE: Brief Communications. Synthesis of Hydroxybenzils

PERIODICAL: Khimicheskaya nauka i promyshlennost', 1959, Vol 4, Nr 6, pp 801-802 (USSR)

ABSTRACT: Several hydroxy-, and dihydroxybenzils with the general formula:



and also 5-hydroxy-2-methoxybenzil were obtained by demethylation of the corresponding methoxyderivatives.

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Brief Communications. Synthesis of Hydroxybenzils

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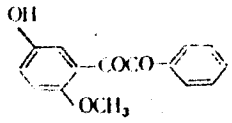
SOV/63-4-6-25/37



For the complete demethylation of methoxybenzils, pyridine hydrochloride was used. Yields and mp of obtained products are given in the table below. I-VI were obtained by heating corresponding 2,3,4-methoxy-, 2,2'-, 3,3'-, and 4,4'-dimethoxybenzils with pyridine hydrochloride. VII-X were synthesized from the corresponding 2,2'-, 3,3'-, 4,4'-, and 2,5-dimethoxybenzils by boiling with a mixture of HBr and CH_3COOH.

There is 1 table; and 6 references, 1 Soviet, 2 German, 1 French, 1 U.K., 1 U.S. The U.S. and U.K. references are: J. H. Gorvin, Nature, 161, 208 (1948); N. J. Leonard, R. T. Rapala, H. L. Herzog, E. R. Blout, J. Am. Chem. Soc., 71, 2997 (1949).

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Brief Communications. Synthesis of Hydroxybenzils

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Hydroxybenzils

Nr of Compounds	Hydroxybenzils	Yield (in %)	mp, °C (crystallized from)
I	2-hydroxy-	90.0	71.5-72 (aqueous alcohol)
II	3-hydroxy- *	96.5	97-98 (benzene + hexane, CCl_4)
III	4-hydroxy-	96.0	129.5-130 (H_2O, benzene)
IV	2,2'-dihydroxy-	97.0	155-156 (benzene)
V	3,3'-dihydroxy- *	92.0	149-149.5 (H_2O dichloro-ethane)
VI	4,4'-dihydroxy-	98.5	244-246 (aqueous alcohol)
VII	2-hydroxy-2'-methoxy-	25.4	125-126 (benzene + hexane, alcohol)
VIII	3-hydroxy-3'-methoxy-*	52.8	68.5-69.5 (benzene)
IX	4-hydroxy-4'-methoxy-*	26.4	162-163 (aqueous alcohol, benzene)
X	5-hydroxy-2-methoxy- *	55.0	103-104 (benzene + hexane, H_2O, CCl_4)

* New Compounds.

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Brief Communications. Synthesis of Hydroxybenzils

77291
SOV/63-4-6-25/37

ASSOCIATION: Institute of Toxicology, Academy of Medical Sciences, USSR (Institut toksikologii Akademii meditsinskikh nauk SSSR)

SUBMITTED: June 9, 1959

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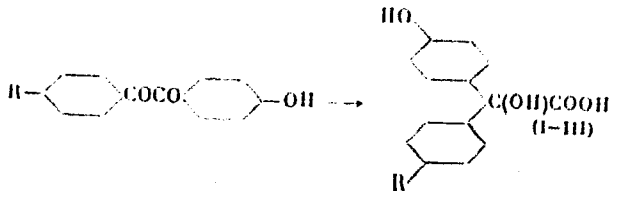
77387
SOV/79-30-1-48/78

AUTHORS: Somin, I. N., Kuznetsov, S. G.

TITLE: Rearrangement of Hydroxybenzils. I.

PERIODICAL: Zhurnal obshchey khimii, 1960, Vol 30, Nr 1, pp 220-227 (USSR)

ABSTRACT: The synthesis of hydroxy- and dihydroxybenzilic acids is described; these acids are potential starting materials for the preparation of new cholinolytic pharmaceuticals. The acids were obtained on rearrangement of hydroxy- and dihydroxybenzils by heating to 150° C with a solution consisting of 73% NaOH and KOH mixture, and 27% water.



(I) R = H, (II) R = OCH$_3$.

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Rearrangement of Hydroxybenzils. I.

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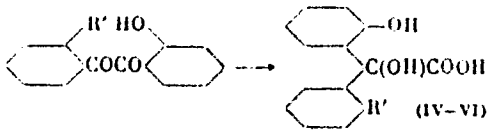
(III) R = OH.



(IV) R' = H, (V) R' = OCH_3, (VI) R' = OH.

The synthesized acids had the following characteristics: (I), yield 90.5%; mp 165-166° C (from water); (II), yield 89.5%; mp 153-154° C (from water); (III), yield 83%; mp 138-140° C (from ethyl ether); (IV), yield 94%; lactone, mp 103-104° C (from benzene); (V), yield 96%; lactone, mp 202-203° C (from methanol); (VI), yield 92%; lactone, mp 129.5-130° C (from benzene). Acids with OH group in ortho-position (IV, V, VI) were unstable, and were easily converted into lactones by heating:

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Rearrangement of Hydroxybenzils. I.

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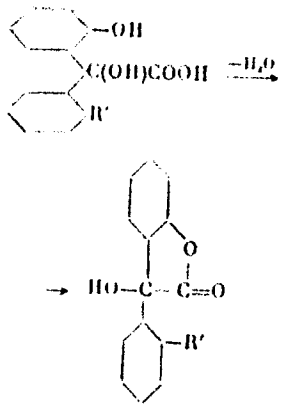

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Rearrangement of Hydroxybenzils. I.

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It was found that the rearrangement of 2-hydroxy- and 2,2'-dihydroxybenzils proceeded more rapidly than that of 4-hydroxy- and 4,4'-dihydroxybenzils. The starting benzils were obtained on demethylation of the corresponding methoxy- and dimethoxybenzils by heating at 180-200° C with pyridine hydrochloride, which gave much higher yields than other demethylating agents, such as hydrobromic acid or aluminum chloride, used by other authors. There are 4 tables; and 18 references, 9 U.S., 3 U.K., 4 German, 2 Soviet. The 5 most recent U.S. and U.K. references are: I. A. Pearl, J. Am. Chem. Soc., 76, 3635 (1954); M. T. Clark, E. C. Hendley, O. K. Neville, ibid., 77, 3280 (1955); D. G. Ott, G. G. Smith, ibid., 77, 2325 (1955); ibid., 77, 2342 (1955); J. Surrell, Y. Stevens, G. Goheen, J. Org. Chem., 22, 39 (1957).

ASSOCIATION: Institute of Toxicology, Academy of Medical Sciences USSR (Institut toksikologii Akademii meditsinskikh nauk SSSR)

SUBMITTED: January 13, 1959

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"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001652410006-6

[illegible], I.N.; KUZNETSOV, [illegible].

Rearrangement of hydroxy- and methoxybenzils. Part 2. Zhur. ob.khim. 30 no.6:1[illegible]-1[illegible] Je '60. (MIRA 13:6)

1. Institut tokseikologii akademii meditsinskikh nauk SSSR.
(Benzil)

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