

L 14521-65 ENT(m)/EMP(t)/ENP(b) IJP(c)/BSD/ASD(a)-5/AFMD(t)/ESD(ga)/ESD(t)
RDA/JD
ACCESSION NR: AP5001426 S/0075/64/019/008/0968/0974

AUTHOR: Ku Tkhan' Long; Sudakov, F. P.; Shakhova, Z. F. B

TITLE: Photometric determination of tellurium in the form of phosphotelluro-
molybdic acid 27

SOURCE: Zhurnal analiticheskoy khimii, v. 19, no. 8, 1964, 968-974

TOPIC TAGS: tellurium, inorganic acid, photometry

Abstract: The formation of phosphotelluromolybdic acid in solution and the possibilities of its use for the determination of tellurium were studied. It was found when tellurium (IV) is added to an acidified solution of phosphomolybdic acid, under definite conditions of acidity and concentration of the components, a yellow-colored ternary phosphotelluromolybdic acid is formed, with a molar ratio P:T:Mo = 1:1:11. The formation of this new compound was confirmed by the increase in the light absorption of pure phosphomolybdic acid in the presence of tellurium and the shift of the absorption spectrum into the long-wave region, by the different behavior of this compound in comparison with phosphomolybdic acid under the influence of such

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factors as acidity, temperature and time, and the presence of the isochromes typical of a ternary compound on the triangular phase diagram of this system. Phosphotelluric acid is stable in the pH interval 1.5-3.0. Phosphotelluric acid was used for the photometric determination of small amounts of tellurium in the presence of selenium measuring the optical density of the complex formed at 400 mμ. Figure and caption.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova (Moscow State University)

SUBMITTED: 08Oct63

ENCL: 00

SUB CODE: GC, OF

NO REF SOV: 005

OTHER: 001

JPRS

Card 2/2

ALIMARIN, I.P.; SUDAKOV, E.P.; KLITINA, V.I.

Extraction of heteropoly compounds and its use in inorganic
analysis. Usp. khim. 34 no.8:1368-1387 Ag '65. (MIRA 18:8)

SUDAKOV, F.F.

"New methods for the determination of phosphorus" by A.A.
Pedorov. Zhur. anal. khim. 20 no.8:884 '65. (MIRA 18:10)

KLITINA, V.I.; SUDAKOV, F.P.; ALIMARIN, I.P.

Extraction of reduced phosphomolybdic acid with oxygen-containing solvents. Zhur. anal. khim. 20 no. 11:1145-1152
'65 (MIRA 19:1)

1. Moskovskiy gosudarstvennyy universitet imeni M.V. Lomonosova.
Submitted October 14, 1964.

L 34375-66 EWT(m)/ENP(t)/ETI IJP(c) JD

A.C. NR. AP6010717

SOURCE CODE: UR/0189/66/000/001/0098/0100

AUTHOR: Sudakov, F. P.; Klitina, V. I.; Maslova, N. T.

ORG: Analytic Chemistry Department, Moscow State University (Kafedra analiticheskoy khimii, Moskovskiy gosudarstvennyy universitet)

TITLE: Extractive photometric determination of phosphorus and silicon in the form of their reduced heteropoly acids

SOURCE: Moscow. Universitet. Vestnik. Seriya II. Khimiya, no. 1, 1966, 98-100

TOPIC TAGS: phosphorus, silicon, phosphorus compound, molybdenum compound, silicon compound, photometric analysis

ABSTRACT: An attempt was made to develop selective and sensitive methods of determining phosphorus and silicon by combining extraction with reactions of reduction of phosphomolybdic acid (PMA) and silicomolybdic acid (SMA) by stannous oxalate. The reduction products of PMA and SMA, obtained at both pH 1.8 and pH 5.0, are satisfactorily extracted with oxygen- and nitrogen-containing extractants, and their extractability depends strongly on the acidity of the aqueous phase, nature of the extractant, and other factors. As a rule, the extractability of reduced PMA and SMA improves with increasing acidity, but optimum conditions exist at pH 5.0. The extracts are stable with time and obey Beer's law. The most suitable method for determining phosphorus

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UDC: 541.14 + 541.15 + 772/773

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ACC NR: AP6010717

involves the reduction of PMA at pH 1.8 and its extraction with a 0.5% dioctylamine solution in a 1:1 chloroform - isoamyl alcohol mixture, followed by photometric analysis of the extract at 740 m μ . In the photometric determination of silicon, the best sensitivity is provided by a method in which SMA reduced at pH 1.8 is extracted with a 1% dioctylamine solution in isoamyl alcohol, and a method in which SMA reduced at pH 5.0 is extracted with a 0.5% dioctylamine solution in a chloroform - isoamyl alcohol mixture. The procedures employed in the determinations are described.

SUB CODE: 07/ SUBM DATE: 20Aug65/ ORIG REF: 001/ OTH REF: 001

Card

2/2 92

SUDAKOV, G. A. [unclear]

Machine for winding, straightening, and cleaning electrode wire.
Sudostreennie 27 no. 10-68 0 'el. (MIRA 14-12)
(Electric welding--Equipment and supplies)

VOL'DERG, N.Ye.; GAYDARAK, K.M.; D.MAT, M.P.; KOFERIN, V.V.;
MOLCHANOV, A.V.; NAUMOV, V.G.; PALAGIN, A.V.; TIMOFEYEV,
A.I.; FRANTSUZOV, Ya.L.; VOLNYANSKIY, A.K., glav. red.;
SUDAKOV, G.G., zam. glav. red.; IOSELOVSKIY, I.V., red.;
GRLOV, V.E., red.; ONKIN, A.K., red.; NIKOLAYEVSKIY,
Yo.Ya., red.; MARKOV, I.I., red.; MEL'NIK, V.I., red.;
STAROVEROV, I.G., red.; TUSHIYAKOV, M.D., red.; CHERNOV,
A.V., red.; KRYLOV, V.A., nauchn. red.

[Assembly of technological equipment of chemical plants]
Montazh tekhnologicheskogo oborudovaniia khimicheskikh
zavodov. Moskva, Stroizdat, 1964. 619 p.

(MIRA 17:11)

VERVEKINA, A.K., inzh.; KOLCHINSKIY, Yu.L., inzh.; NIKOLAYEVSKIY, Ye.Ye., inzh.; RODIONOVA, R.G., inzh.; RYAPOLOV, A.F., inzh.; SOKOL, I.A., inzh.; STERLIN, S.L., inzh.; EYDEL'NANT, L.B., inzh.; ORLOV, V.M., kand. tekhn. nauk, retsenzent; YURGEL', B.I., inzh., retsenzent; FOKIN, V.Ya., inzh., nauchn. red.; VOLNYANSKIY, A.K., glav. red.; SUDAKOV, G.G., zam. glav. red.; IOSELOVSKIY, I.V., red.; MARKOV, I.I., red.; MEL'NIK, V.I., red.; ONKIN, A.K., red.; STAROVEROV, I.G., red.; TUSHYAKOV, M.D., red.; CHERNOV, A.V., red.

[Engineering pipelines for industrial enterprises] Tekhnologicheskie truboprovody promyshlennykh predpriatii. Moskva, Stroizdat, 1964. 2 v. (MIRA 17:12)

VERVEYKINA, A.K., inzh.; KOLCHINSKIY, Yu.L., inzh.; NIKOLAYEVSKIY, Ye.Ya., inzh.; RODIONOVA, R.G., inzh.; RYAPOLOV, A.F., inzh.; SOKOL, I.A., inzh.; STERLIN, S.L., inzh.; EYDEL'MANT, L.B., inzh.; ORLOV, V.M., kand. tekhn. nauk retsenzent; YURGEL', B.I., inzh., retsenzent; FOKIN, V.Ya., inzh., ~~nauch.~~ red.; VOLNYANSKIY, A.K. red.; MARKOV, I.I., red.; MEL'NIK, V.I., red.; ONKIN, A.K., red.; STAROVEROV, I.G., red.; TUSHNYAKOV, M.D., red.; CHERNOV, A.V., red.; SUDAKOV, G.G., red.; IOSELOVSKIY, I.V., red.

[Technological pipings in industrial enterprises] Tekhnologicheskie truboprovody promyshlennykh predpriyatii. Moskva, Stroizdat. Pt.1. 1964. 784 p. (MIRA 18:9)

VESELOV, A.A., inzh.; KARNEYEV, N.A., inzh.; KOZLOVSKIY, L.I.,
inzh.; STEPANOV, A.I., inzh.; TUSHNYAKOV, M.D., inzh.;
SHCHEPET'YEV, A.I., inzh.; VOLNYANSKIY, A.K., glav. red.;
SUDAKOV, G.G., zam. glav. red.; TARAN, V.D., red.;
SEREBRENNIKOV, S.S., red.; MIKHAYLOV, K.A., red.; STAROVEROV,
I.G., red.; VOLODIN, V.Ye., red.; NIKOLAYEVSKIY, Ye.Ya., red.

[Hoisting and conveying equipment for assembly and specialized
operations] Pod"emno-transportnoe oborudovanie dlia montazh-
nykh i spetsial'nykh rabot. Izd.2., dop. Moskva, Stroiizdat,
1964. 679 p. (MIRA 18:4)

SEBALOV, I.N., Cand Med Sci - - (diss) "Concerning the re-
flex stimulation of the nucleus of the vagus nerve under
comparatively cold conditions," Moscow, 1960, 19 pp (Institute
of Normal and Pathological Physiology, A.S. USSR) (KL, 24-60, 125)

SUDAKOV, K.V.

Reflex mechanism of periodic gastric hunger activity. *Biul. eksp. biol. i med.* 50 no. 11:23-28 N '60. (MIRA 13:12)

1. Iz kafedry normal'noy fiziologii i Moskovskogo ordena Lenina meditsinskogo instituta (zav. - deystvitel'nyy chlen AMN SSSR P.K. Anokhin).

(STOMACH) (HUNGER)

ASMAYAN, N.V.; SUDAKOV, K.V.

Characteristics of the functional state of the nucleus of the
vagus nerve during relative starvation and satiety. Fiziol.zhur.
47 no.5:605-611 My '61. (MIRA 14:5)

1. From the Department of Physiology, I.M.Sechenov Medical Institute,
Moscow.

(VAGUS NERVE)

(STARVATION)

SUDAKOV, K.V.

Role of the frontal segments of the cerebral cortex in the formation of feeding behavior. Fiziol. zhur. 48 no.2:165-169 F '62.

(MIRA 15:2)

1. From the I.M. Sechenov Medical Institute, Moscow.
(CEREBRAL CORTEX) (HUNGER)

SUDAKOV, K.V.; ROGACHEVA, S.K.

Afferent and efferent activity of the gastric fibers of the vagus nerve under conditions of hunger and following food intake. Fiziol. zhur. 48 no.6:728-734 Je '62. (MIRA 15:8)

1. Kafedra normal'noy fiziologii 1-go Meditsinskogo-institutata imeni I.M.Sechenova, Moskva.

(VAGUS NERVE) (HUNGER) (FOOD)

SUDAKOV, K.V.

Neurohumoral mechanism of ascending activation of the frontal segments of the cerebral cortex in physiological hunger. Biul. eksp. biol. i med. 54 no.8:3-7 Ag '62.

(MIRA 17:11)

1. Iz kafedry normal'noy fiziologii (zav. - deystvitel'nyy chlen AMN SSSR prof. P.K. Anokhin) I Moskovskogo ordena Lenina meditsinskogo instituta imeni Sechenova. Predstavlena deystvitel'nym chlenom AMN SSSR Anokhinym.

SUDAKOV, K.V.

Study of ascending activating influences on the cerebral cortex during starvation with the aid of local polarization of the hypothalamus. Fiziol. zhur. 49 no.8:901-907 Ag '63. (MIRA 17:2)

1. From the Laboratory for General Physiology of the Central Nervous System Institute of Normal and Pathologic Physiology, U.S.S.R. Academy of Medical Sciences, Moscow.

SUDAKOV, K.V.; FADEYEV, Yu.A.

Characteristics of ascending activation of the cerebral cortex
in a state of physical starvation and during pain stimulation.
Fiziol. zhur. 49 no.11:1310-1317 N '63. (MIRA 17:8)

1. Laboratoriya obshchey fiziologii tsentral'noy nervnoy
sistemy Instituta normal'noy i patologicheskoy fiziologii
AMN SSSR, Moskva.

SUDAKOV, K.V.

Electrophysiological characteristics of synaptic organizations
of the cerebral cortex following food stimulation. Trudy Inst.
norm. i pat. fiziol. AMN SSSR 7:96-97 '64. (MIRA 18:6)

1. Labora'iya obshchey fiziologii tsentral'noy nervnoy sistemy
(zav. - deystvital'nyy chlen AMN SSSR, prof. P.K.Anokhin) Instituta
normal'noy i patologicheskoy fiziologii AMN SSSR.

SUDAKOV, K.V.; MNASIN, L.S.

Characteristics of the mechanism of ascending activation of
the cerebral cortex in mechanical stimulation of the stomach.
Biul. eksp. biol. i med. 59 no.4:8-11 Ap '65.

(MIRA 18:5)

1. Laboratoriya obshchey fiziologii tsentral'noy nervnoy sistemy
(zav. - deystvitel'nyy chlen AMN SSSR prof. P.K. Anokhin) Insti-
tuta normal'noy i patologicheskoy fiziologii (dir. - deystvitel'nyy
chlen AMN SSSR prof. V.V. Parin) AMN SSSR, Moskva.

SULAKOV, K.V.

Interaction of the hypothalamus and the reticular formation of the mesencephalon and thalamus in the mechanism of the selective ascending activation of the cerebral cortex in a state of physiological starvation. Fiziol.zhur. 51 no.4:449-456 Ap '65.
(MIRA 18:6)

1. Laboratoriya obshchey fiziologii tsentral'noy nervnoy sistemy
Instituta normal'noy i patologicheskoy fiziologii AMN SSSR, Moskva.

... ..
... ..
... .. (1977)
1. Laboratoriy: obshchey fiziologii tsentral'noy nervnoy sistemy
(rav. - deystvitel'nyy chlen ANU SSSR prof. P.K. Anokhin) Insti-
tut normal'noy i patologii chelovecheskoy fiziologii (dir. - deystvitel'nyy
chlen ANU SSSR prof. V.V. Korin) ANU SSSR, Moskva.

L 29366-66

ACC NR: AP6019800

SOURCE CODE: UR/0239/65/051/004/0449/0456

AUTHOR: Sudakov, K. V.

23
B

ORG: Laboratory of General Physiology of the Central Nervous System, Institute of Normal and Pathological Physiology, AMN SSSR, Moscow (Laboratoriya obshchey fiziologii tsentral'noy nervnoy sistemy Instituta normal'noy i patologicheskoy fiziologii AMN SSSR)

TITLE: Interaction of the ²²hypothalamus, the reticular formation of the midbrain and the thalamus in the mechanism of the selective ascending activation of the cerebral cortex in physiological hunger

SOURCE: Fiziologicheskii zhurnal SSSR, v. 51, no. 4, 1965, 449-456

TOPIC TAGS: cerebral cortex, EEG, cat, bioelectric phenomenon

ABSTRACT: EEG studies were carried out on cats that had been deprived of food for 1-2 days and were anesthetized with urethane. The bioelectric activity of hypothalamus nuclei at the feeding and satiety center, medial structures of the stem reticular formation, and medial nuclei of the thalamus showed that these structures of the brain were in a state of stimulation in the hungry animals. When 2 cm³ of a 40% glucose solution were injected into one of the carotid arteries, the high-frequency, low-amplitude electric activity of the hypothalamus, reticular formation, and thalamus, which

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UDC: 612.822.3+612.826

I 29366-56

ACC NR: AP6019800

indicated stimulation, was changed to a slow, high-amplitude activity. Stimulation of the frontal division of the cerebral cortex corresponded to the stimulated activity of the three subcortical formations. Lowering of the excitability of the thalamus by polarization with a d.c. anode eliminated the "hunger" stimulation in the cerebral cortex, while the degree of activation in the hypothalamus and in the reticular formation remained unchanged. Polarization of the reticular formation did not affect the hunger activation in the cortex, the thalamus, or the hypothalamus. On the other hand, polarization of the hypothalamus removed the activation due to hunger not only in the cortex but also in the thalamus and reticular formation. This indicated that the hypothalamus is the subcortical formation in which activation due to hunger originates and from which this activation is transmitted to the cerebral cortex. Activation of the hypothalamus divisions of the feeding center by means of a d.c. cathode resulted in a generalized excitation of the cortex. Upon administration of aminazine, which blocks the rostral part of the stem reticular formation, or coagulation of structures of the midbrain reticular formation, the generalized excitation disappeared and only excitation of the frontal part of the cortex remained. On the basis of this it may be concluded that the hypothalamus produces in physiological hunger not only ascending activation by acting on the frontal cortex but also diffuse stimulation through the midbrain reticular formation, which results in generalized activation of the cerebral cortex. Orig. art. has: 4 figures. [JPRS]

SUB CODE: 06 / SUBM DATE: 08Jul63 / ORIG REF: 009 / OTH REF: 005

Card 2/2 CC

L 27288-66 EWT(1) RH/RO

ACC NR: AP6016867

SOURCE CODE: UR/0219/65/060/010/0003/0008 38

AUTHOR: Sudakov, K. V.; Turenko, A. I. B

ORG: Laboratory of the General Physiology of the Central Nervous System, Institute of Normal and Pathological Physiology/headed by Active Member AMN SSSR, Professor P.K. Anokhin, AMN SSSR, Moscow (Laboratoriya obschey fiziologii tsentral'noy nervnoy sistemy Instituta normal'noy i patologicheskoy fiziologii AMN SSSR)

TITLE: Neurochemical mechanisms of ascending activation of the cerebral cortex in starving animals 2.2

SOURCE: Byulleten' eksperimental'noy biologii i meditsiny, v. 60, no. 10, 1965, 3-8

TOPIC TAGS: cerebral cortex, cat, EEG, neurophysiology, pharmacology

ABSTRACT: Experiments were carried out to test the validity of the premise that cholinergic systems play an important role in ascending activation of the cerebral cortex under hunger conditions. Cats under urethan anesthesia were used in the experiments. The animals were kept without food for a period of 24 hours. In some of the experiments the electroencephalographic data were obtained directly from the cranium by means of acicular electrodes. In others, trephination of the cranium in the area above the frontal lobe of one of the hemispheres was carried out, making possible the introduction of atropine and amizil, cholinolytic substances into the cortex. Electroencephalograms directly from the cortex were recorded. UDC: 612.825.1-06:612.391

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L 27288-66

ACC NR: AP6016867 Potentials in response to the irritation of the sciatic nerve were also recorded. Previous experiments had established that the application of cholinolytic substances to synaptic formations of the cortex inhibited the initial activation of the cortex in starving animals, but had no effect on manifestations of pain activation in response to irritation of the sciatic nerve, indicating a blocking action of the substances on the cholinergic synaptic formations of the cerebral cortex. The cholinolytic substances thus modified the character of the potential induced by the irritation of the sciatic nerve by suppressing all its positive components, and allowing the manifestation of its negative components only. The investigations established also that cortical cholinoreactive synaptic formations participate in the hypothalamic stimulation in hunger conditions; it is logical to assume, the authors note, that cholinolytic substances would produce a similar effect. The results of the experiments thus provide a basis for the premise that the mechanisms of ascending activation of the cortex under hunger conditions are of a neurochemical nature. This paper was presented by Active Member AMN SSSR P.K. Anokhin. Orig. art. has: 3 figures. [JPRS]

SUB CODE: 06 / SUBM DATE: 08Jun64 / ORIG REF: 013 / OTH REF: 008

Card

2/2 CC

SUDAKOV, N.

An outstanding scientist and public figure. Radio no.6:16
Je '64. (MIRA 17:10)

SUDAKOV, N.A., kand. vet. nauk.

Rubber catheter for cows. Veterinaria 35 no.4:68 Ap '58.
(MIRA 11:3)

1. Moskovskaya veterinarnaya akademiya.
(Catheters)

SUDAKOV, N. A. *Changes in* ~~loc~~ Vet Sci -- (diss) "~~Variation~~ of the cardiovascular system
and certain biochemical blood ~~indices~~ *ice* in horses in ~~connection with~~ *relation to* body ~~constitution~~ *build*
and physical burden." Mos, 1959. 23 pp (Mos Vet Acad of the Min of Agr RSFSR),
160 copies (KL, 43-59, 126)

FILATOV, Pavel Vasil'yevich, doktor veter. nauk; SUDAKOV, Nikolay Aleksandrovich, doktor veter. nauk; BELYAYEV, Ivan Mikhailovich, kand. veter. nauk; ZELEPUKIN, V.S., red.

[Practical exercises in clinical diagnosis by X-raying]
Prakticheskie zaniatiia po klinicheskoi diagnostike s rentgenologiei. Moskva, Izd-vo "Kolos," 1964. 199 p.
(MIRA 17:5)

BARYSHNIKOV, I.A., etv. red.; ROSHCHEVSKIY, M.P., st. nauchn.
sotr., red.; SUDAKOV, N.A., red.; FILATOV, P.V., red.

[Physiological principles of animal electrocardiography]
Fiziologicheskie osnovy elektrokardiografii zhivotnykh.
Moskva, Nauka, 1965. 136 p. (MIRA 18:3)

1. Akademiya nauk SSSR, Komi filial, Syktyvkar. 2. Ka-
fedra klinicheskoy diagnostiki Moskovskoy veterinarnoy
akademii (for Sudakov). 3. Laboratoriya ekologii i fi-
ziologii zhivotnykh Instituta biologii Komi filiala AN
SSSR, Syktyvkar (for Roshchevskiy).

MATVEYEV, V.S.; SUDAKOV, N.I.

Conference of the Ural Department of the Psychological Association.
Vop.psikhol. 9 no.2:187-189 Mr-Apr '63. (MIRA 16:4)
(Perception—Congresses)

SUDAKOV, N. I.

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PHASE I BOOK EXPLOITATION

SOV/5526

Vsesoyuznoye soveshchaniye po magnitnoy strukture ferromagnetikov, Krasnoyarsk, 1958.

Magnitnaya struktura ferromagnetikov; materialy Vsesoyuznogo soveshchaniya, 10 - 16 iyunya 1958 g., Krasnoyarsk (Magnetic Structure of Ferromagnetic Substances; Materials of the All-Union Conference on the Magnetic Structure of Ferromagnetic Substances. Held in Krasnoyarsk 10 - 16 June, 1958) Novosibirsk, Izd-vo Sibirskogo otd. AN SSSR, 1960. 249 p. Errata slip inserted. 1,500 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Institut fiziki Sibirskogo otdeleniya. Komissiya po magnetizmu pri Institute fiziki metallov OFAN.

Resp. Ed.: L. V. Kirenskiy, Doctor of Physical and Mathematical Sciences; Ed.: R. L. Dudnik; Tech. Ed.: A. P. Mazurova.

PURPOSE: This collection of articles is intended for researchers in ferromagnetism and for metal scientists.

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Magnetic Structure (Cont.)

SOV/5526

COVERAGE: The collection contains 38 scientific articles presented at the All-Union Conference on the Magnetic Structure of Ferromagnetic Substances, held in Krasnoyarsk in June 1958. The material contains data on the magnetic structure of ferromagnetic materials and on the dynamics of the structure in relation to magnetic field changes, elastic stresses, and temperature. According to the Foreword the study of ferromagnetic materials had a successful beginning in the Soviet Union in the 1930's, was subsequently discontinued for many years, and was resumed in the 1950's. No personalities are mentioned. References accompany individual articles.

TABLE OF CONTENTS:

Foreword	3
Snur, Ya. S. [Institut fiziki metallov AN SSSR - Institute of Physics of Metals, AS USSR, Sverdlovsk]. On the Magnetic Structure of Ferromagnetic Substances	5
Card 2/11	

Magnetic Structure (Cont.)

SOV/5526

Kirenskiy, L. V., and V. V. Veter [Institute of Physics, Siberian Branch AS USSR, Krasnoyarsk]. Measuring the Width of the Boundary Layer Between Domains in Ferromagnetic Substances

53

Startseva, I. Ye., and Ya. S. Shur [Institute of Physics of Metals AS USSR, Sverdlovsk]. Magnetic Structure of a Ferromagnetic Material of Residual Magnetization and Its Change Under the Effect of a Variable Magnetic Field

59

Kirenskiy, L. V., N. I. Sudakov, and L. I. Slobodskoy [Institut Fiziki SO AN SSSR, pedagogicheskiy institut - Institute of Physics, Siberian Branch AS USSR, Teachers Institute, Krasnoyarsk]. Temperature Dependence of Hysteresis Losses in Rotating Magnetic Fields in Iron Silicide Crystals

61

Sudovtsov, A. I., and Ye. Ye. Semenenko [Fiziko-tekhnicheskii in-t AN UkrSSR - Physicotechnical Institute AS UkrSSR, Khar'kov]. Effect of Domain Structure on the

Card 5/11

32228

24 2300 1144, 1147, 1482.

S/196/61/000/011/007/042
E194/E155

AUTHORS: Kirenskiy, L.V., Sudakov, N.I., and Slobodskoy, L.I.

TITLE: Hysteresis loss as a function of temperature in rotating magnetic fields in crystals of silicon iron

PERIODICAL: Referativnyy zhurnal, Elektrotehnika i energetika, no.11, 1961, 2, abstract 11B 8. (Symposium "Magnetic structure of ferromagnetics", Novosibirsk, Sib. otd. AN SSSR, 1960, 61-71)

TEXT: Measurements with an improved Akulov anisometer showed that in the temperature range - 195 to + 400 °C the change in the shape of curves of magnetic moment with increase of field takes the same course as at room temperature. With increase of temperature the values of the moments decrease, maximum losses of rotational hysteresis being displaced towards stronger fields, from 550 oersted at - 195 °C to 1200 oersted at 500 °C.
7 literature references.

X

Card 1/2

Hysteresis loss as a function of ...

32228

S/196/61/000/011/007/042
E194/E155

ASSOCIATION: In-t fiziki SO AN SSSR; Pedagogich. in-t
Krasnoyarsk
(Physics Institute SO AS USSR; Pedagogical
Institute Krasnoyarsk)

X

[Abstractor's note: Complete translation.]

Card 2/2

SUDAKOV, N. I., Cand Phys-Math Sci -- "Study of the temperature dependence of losses ^{upon} ~~at the~~ hysteresis in rotating magnetic fields." Krasnoyarsk, 1961. (Min of Ed RSFSR. Krasnoyarsk Ped Inst) (KL, 8-61, 228)

25806

S/048/61/025/005/020/024
B117/B201

24,2200

AUTHORS: Sudakov, N. I., Savchenko, M. K., Zagirova, Ye. K., and Starostin, I. I.

TITLE: Measurement of hysteresis losses in a rotating magnetic field in thin films

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya, v. 25, no. 5, 1961, 643-646

TEXT: The present investigation was the subject of a lecture delivered at a symposium on thin ferromagnetic films (Krasnoyarsk, July 4 to 7, 1960). Hysteresis losses were measured in the rotating field, and anisotropy constants in thin permalloy films were measured by the method of rotational moments. The magnetic field was created with the aid of an electromagnet designed at the fizicheskaya laboratoriya Krasnoyarskogo instituta tsvetnykh metallov im. M. I. Kalinina (Physical Laboratory of the Institute of Nonferrous Metallurgy imeni M. I. Kalinin) and built at the Krasnoyarskiy zavod tyazhelogo mashinostroyeniya (Krasnoyarsk Heavy Machine Building Plant). The mechanical moments acting in the magnetic

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Measurement of hysteresis losses in...

25806 S/O48/61/025/005/020/024
B117/B201

field upon a disk-shaped ferromagnetic film were measured by an anisometer developed by N. S. Akulov. The high sensitivity of the anisometer was achieved with a thin long tungsten suspension wire 0.1 mm in diameter and 0.5 m long. The scale for reading the rotation angle of the mirror was at a distance of 4.05 m from the anisometer. For the purpose of protecting against air movements the whole rotation system was placed into a duralumin housing with a light entry window made of glass. Experiments were conducted with permalloy films 400, 800, and 1300 Å thick. The films were prepared by thermal sputtering of molybdenum permalloy (80 % Ni, 17 % Fe, 3 % Mo) in vacuum ($4 \cdot 10^{-5}$ mm Hg). The metal was sputtered onto a glass backing heated to 300°C (disk 18 mm in diameter) in an outer magnetic field of 90 oe brought about by Helmholtz coils. It was established from tables for harmonic functions obtained by decomposing into their components by the Fourier method that the harmonic function with the largest amplitude has a period π . This points to the presence of a uniaxial anisotropy. On the basis of curves of moments, obtained for the three films concerned in a field of 8500 oe, it was possible to calculate the anisotropy constants: $K = 1.4 \cdot 10^3$ (1300 Å); $K = 0.85 \cdot 10^3$ (800 Å);

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B117/B201

Measurement of hysteresis losses in...

$K = 0.75 \cdot 10^3$ (400 Å). The hysteresis losses were calculated during a magnetic reversal cycle in rotating fields from the areas between the curves of moments using formula

$$Q_r = \int M d\psi$$

(M - value of mechanical moment, ψ - angle of rotation of the field). The areas were determined with the aid of a planimeter. The analysis of the difference curves of mechanical moments and the results found for each of the films in the calculation of hysteresis losses permit drawing the following conclusions: (1) on a rise of the field stress no changes are observed in the period of sinusoidal curves of moments. On a change of the field from 50 to 8500 oe the curves have a period equal to π , i.e., all specimens have uniaxial anisotropy; (2) the value of the maximum moment changes on a rise of the field strength in the same way as in the crystallographic anisotropy of single crystals, but proceeds more slowly in medium fields; with growing film thickness the maximum amount of the moment grows in the entire field strength range; (4) the hysteresis losses become larger in a slow field of rotation with growing field strength in the same way as in a cyclic magnetic reversal. This contradicts statements made by Card 3/4

25806

S/048/61/025/005/020/024
B117/B201

Measurement of hysteresis losses in...

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N. S. Akulov for the rotation hysteresis in spatial single crystal specimens. According to that theory, hysteresis losses grow at the beginning up to a certain maximum, and vanish in fields exceeding the saturation field; (5) hysteresis losses are influenced by the film thickness. With growing thickness they become a little larger; (6) the films prepared without field with the aid of Helmholtz coils differ in no way, as to anisotropy, from films whose sputtering has taken place in the magnetic field of these coils. To bring about anisotropy in thin films it is probably sufficient for sputtering to take place in a field of a low intensity. Such a field may be created by the experimental conditions themselves: the field of the heating element of an electric heater as well as the earth's magnetic field. There are 6 figures and 8 references: 7 Soviet-bloc and 1 non-Soviet-bloc.

ASSOCIATION: Krasnoyarskiy institut tsvetnykh metallov im. M. I. Kalinina (Krasnoyarsk Institute of Nonferrous Metallurgy imeni M. I. Kalinin). Institut fiziki Sibirskogo otdeleniya Akademii nauk SSSR (Institute of Physics of the Siberian Department of the Academy of Sciences USSR)

Card 4/4

242200

31604
S/048/61/025/012/009/022
B116/B138

AUTHORS: Kirenskiy, L. V., Drokin, A. I., Dylgerov, V. D., Sudakov, N. I., and Zagirova, Ye. K.

TITLE: Temperature dependence of the first anisotropy constant and magnetic structure of iron-manganese ferrites

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya, v. 25, no. 12, 1961, 1472 - 1476

TEXT: The temperature dependence of the first magnetic anisotropy constant K_1 of an iron-manganese ferrite single crystal was studied in the (100) plane, and its domain structure in the (110) plane. Balls 4 - 8 mm diam were made from specimens grown in a Verneuil's apparatus from $MnFe_2O_4$ with manganese excess (25% Mn_3O_4) by A. A. Popova at the Institut kristallografii AN SSSR (Institute of Crystallography AS USSR). To find K_1 and $K_1(T)$ the torques acting on the specimen in a uniform magnetic field were measured on an Akulov anisometer with a slightly modified strain gauge (error in measurement, $\leq 2\%$). Torque curves were first recorded in Card 1/4

Temperature dependence of the first....

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B116/B138

different fields at room and oxygen temperatures, as a function of the angle between the direction of field and the $[100]$ axis. Then the continuous variation in maximum torque in the (100) plane was examined in the temperature range $-183 - +300^{\circ} - -183^{\circ}$. A field strength of 5100 produced saturation. Powder patterns were produced by W. S. Elmore's method (Ref.11, see below). The graphs show that at 22°K torque is nearly zero in fields of up to 750 oe. Between 750 and 1000 oe it increases, reaching $0.71 \cdot 10^{-4} \text{ erg} \cdot \text{cm}^{-3}$, after which it remains constant. In fields of up to 3000 oe there was a sharp increase at the temperature of boiling oxygen. The linearity of $K_1 = f(T^2)$ means that the Bryukhatov-Kirenskiy law holds for this type of crystal also. Extrapolation to absolute zero yielded $K_0 = 17 \cdot 10^4 \text{ erg} \cdot \text{cm}^{-3}$. The nature of a domain structure is found to

be dependant on the direction of demagnetization. With demagnetization in the $[110]$ direction, the powder patterns in the (110) plane form thick, parallel lines perpendicular to one of the axes of easy magnetization. A secondary, wedge-shaped structure between the principal lines, indicates that the surface deviates slightly from the (110) plane. Domain structure remains constant under magnetization in the $[110]$ direction up to 400 oe; up to 600 oe only the secondary structure is changed. Between 750 and

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Temperature dependence of the first...

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S/048/61/025/012/009/022
B116/B138

1000 oe new boundaries are formed perpendicular to the second direction of easy magnetization, with another wedge-shaped secondary structure between them. Around 1000 oe, the formation of new boundaries ceases and the old ones practically disappear. The new boundaries disappear at about 1300 oe. However, new boundaries are not formed everywhere, and, where this has not occurred, the initial domain structure will reappear after demagnetization in the [110] direction. The structure remains unchanged up to 723 oe and disappears at 1300 oe. No boundaries shifts are observed. Comparing variations in torque and domain structure with the field increase, it is concluded that the greatest changes in domain structure occur in the same fields in which the crystal anisotropy increases most strongly. Papers by T. M. Perekalina, A. A. Askochenskiy (Ref.3: stat'ya v sb.: Ferrity. Izd. AN BSSR, Minsk, 1960), Ye. A. Turov and A. I. Mitsek (Ref.10: stat'ya v sb.: Ferrity . Izd. AN BSSR, Minsk, 1960) are mentioned. There are 4 figures and 11 references: 6 Soviet and 5 non-Soviet. The four most recent references to English-language publications read as follows: Ref. 1: Bozorth, R. M., Tilden, E. F., Williams, A. J., Phys. Rev., 99, 6, 178 (1955); Ref. 2: Bickford, L. R., Phys. Rev., 78, 449 (1950); Ref. 4: Bates, L. F., Craik, D. J., Griffiths, P. M., Isaac, E. D., Proc. Roy. Soc., A 253, 1

Card 3/4

Temperature dependence of the first....
31604
S/048/61/025/012/009/022
B116/B138

(1959); Ref. 5: Smith, A. W., Williams, G. W., Canad. J. Phys., 38, 9, 1187
(1960).

ASSOCIATION: Institut fiziki Sibirskogo otdeleniya Akademii nauk SSSR
(Institute of Physics of the Siberian Department of the
Academy of Sciences USSR), Institut tsvetnykh metallov im.
M. I. Kalinina (Institute of Nonferrous Metals imeni M. I.
Kalinin), Krasnoyarskiy pedagogicheskiy institut (Krasnoyarsk
Pedagogical Institute)

Card 4/4

4087L

247900

S/151/62/004/000/001/045
E108/B186

AUTHORS: Drokin, A. I., Dylgerov, V. D., Sudakov, N. I., and Starostin, I. I.

TITLE: Temperature dependence of rotary-hysteresis losses in Mg-Mn ferrites

PERIODICA: Fizika tverdogo tela, v. 4, no. 9, 1962, 2293-2296

TEXT: Magnetic moments and hysteresis losses of monocrystalline Mg-Mn ferrites were studied in a rotary magnetic field at various temperatures (-183° , $+22^{\circ}$, $+100^{\circ}\text{C}$) and at various field strengths (H from 700 to 4000 oe). Moment curves were found to be analogous to those of silicon iron which, like Ni and meteoritic Fe crystals, several authors have already investigated. Results: Akulov's theory was partly refuted on the ground that hysteresis losses did not drop to zero either at low (-195°) or at elevated ($500-700^{\circ}$) temperatures. Single crystals, carefully prepared by the Institut poluprovodnikov AN SSSR (Institute of Semiconductors of the AS USSR), were precisely ground to the (110) face and etched in 30% sulfuric acid. Powder figures were observed and photographed using a M5H-6 (MBI-6) microscope. Magnetization was effected by means of a specially powerful
Card 1/3

Temperature dependence of ...

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B108/B186

electromagnet with a small pole gap. High degree of rectangularity (98 %) was of special interest. While moment curves have the period π at lower H (up to 700 oe), they are characterized at higher H by the equation

$$M = \frac{k}{\theta} (2\sin 2\psi + 3\sin 4\psi),$$

where M - magnetic moment, ψ - the angle between the direction [001] and the field. Coincidence between the direct and inverse torque occurs only at -183°C . At this temperature, Amulov's theory is valid for H up to 1500 oe. With increasing temperatures and H values, the hysteresis losses reach their maximum value at 1200 oe: at $+22^{\circ}\text{C}$ about $9 \cdot 10^{-2}$ erg/cm³; afterwards the curve dips slightly and increases continuously from 2000-4000 oe; at $+100^{\circ}\text{C}$ the peak lies approximately at $5 \cdot 10^{-2}$ erg/cm³ and drops slightly over the range of 2000-4000 oe. The losses, however, never become zero. Until now there has been no theory able to explain the existence of hysteresis above 1500 oe. Observation of the domain structure dynamics drew attention to strongly distorted boundaries, ascribed to strong internal stresses and nonhomogeneities. The most prominent changes in the

Card 2/3

Temperature dependence of ...

S/181/62/004/009/001/045
B108/3186

domain structure were observed between 900 - 1000 oe of the rotary field.
There are 3 figures.

ASSOCIATION: Institut fiziki sibirskogo otdeleniya AN SSSR Krasnoyarsk
(Physics Institute of the Siberian Department AS USSR, Kras-
noyarsk)

SUBMITTED: February 1, 1962

Card 3/3

DROKIN, A.I.; DYLGEROV, V.D.; SUDAKOV, N.I.; ZAGIROVA, Ye.K.

Losses on rotational hysteresis and dynamics of a domain structure
in rotating fields of iron-cobalt ferrate single crystals. Fiz.
met. i metalloved. 13 no.5:788-792 My '62. (MIRA 15:6)

1. Institut fiziki Sibirskogo otdeleniya AN SSSR, Krasnoyarskiy
pedagogicheskiy institut i Institut tsvetnykh metallov imeni
M.I. Kalinina.

(Ferrates—Magnetic properties)
(Domain structure)

S/048/62/026/002/031/032
B117/B138

24,2200

AUTHORS: Savchenko, M. K., Sudakov, N. I., and Izotova, T. P.

TITLE: Anisotropy of thin ferromagnetic films

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya, v. 26,
no. 2, 1962, 314 - 317

TEXT: This paper was presented at a conference on magnetism and antiferromagnetism. The authors studied the relationship between the anisotropy of ferromagnetic films and their structural defects and inhomogeneities. Pure Fe, Ni and permalloy (79% Ni, 17% Fe, 4% Mo) were vacuum evaporated on to polished optical glass disks ($1 \cdot 10^{-5}$ mm Hg). In some cases the base was rotated to prevent, or cause the uniform distribution of structural defects. Anisotropy was determined from the mechanical momenta acting on the film in a rotating uniform magnetic field (4000 oe). The sensitivity of the anisometer was $1 \cdot 10^3$ erg cm^{-3} per mm of scale. Magnetic anisotropy was found to be dependent on the conditions under which the film was produced. Maximum anisotropy is observed with directed incidence
Card 1/2 ✓B

S/048/52/026/002/031/032
B117/B138

Anisotropy of thin ...

of the atom beam to the base. This confirmed earlier assumptions (Ref. 3, see below). In this case a very large number of aligned structural defects are formed in the film. Rotation of the base prevents this type of anisotropy. If the film is screened against the action of the magnetic field during formation an isotropic film will be formed. The study showed that the magnetic anisotropy can be varied in a wide range by choosing a suitable production process. There are 4 figures, 1 table, and 3 non-Soviet references. The reference to the English-language publication reads as follows: Ref. 3. Pugh E. W., Boyd E. L., Freedman I. F., J. Res. and Develop. Brit. C. I. R. A., 4, 163 (1960). VB

ASSOCIATION: Institut fiziki Sibirskogo otdeleniya Akademii nauk SSSR (Institute of Physics of the Siberian Department of the Academy of Sciences USSR).
Krasnoyarskiy institut tsvetnykh metallov im. M. V. Kalinina (Krasnoyarsk Institute of Nonferrous Metals imeni M. V. Kalinin)

Card 2/2

SUDAKOV, N.I.; NIKOLAYEVA, N.M., red.isd-va; MIKHEYEVA, A.A., tekhn.
red.

[Stability and durability of floors in aggressive media]
Prochnost' i stoikost' polov v agressivnoi srede. Moskva,
Gostrolizdat, 1963. 101 p. (MIRA 16:8)
(Floors--Corrosion)

DROKIN, A.I.; DYLGEROV, V.D.; SUDAKOV, N.I.; ZAGIROVA, Ye.K.

Temperature dependence of the anisotropy constant and the magnetostriction of magnesium-manganese ferrites at indoor temperature. Izv. SO AN SSSR no.2 Ser. tekhn. nauk no.1:99-103 '63. (MIRA 16:8)

1. Krasnoyarskiy institut fiziki Sibirskogo otdeleniya AN SSSR i Institut tsvetnykh metallov imeni M.I. Kalinina, Krasnoyarskiy pedagogicheskiy institut.
(Ferrites) (Anisotropy) (Magnetostriction)

ACCESSION NR: AP3000937

S/0139/63/000/002/0111/0111

AUTHORS: Drokin, A. I.; Dy*lgerov, V. D.; Sudakov, N. I.; Vlasov, M. V.

TITLE: Dependence of rotary hysteresis loss in magnesium-manganese ferrite single crystals on the magnitude of magnetic field and temperature

SOURCE: Izv. VUZ. Fizika, No. 2, 1963, 141-144

TOPIC TAGS: magnetic hysteresis, ferrite, single crystal, mechanical moment, magnetic field

ABSTRACT: Rotary magnetic hysteresis loss has been studied on the (100) plane of magnesium-manganese ferrite single crystals, together with the dynamics of powder figures in the rotary magnetic field. The rotary loss was investigated by measuring the mechanical moment acting on single crystal ferrite pellets placed in a homogeneous magnetic field slowly rotating in forward and reverse directions. Field strength varied between 0 to 4000 oersteds at temperatures from -183 to 100C. The powder figures were photographed through a MBI-6 microscope. The results show that anisotropy in the single crystal plane (100) at 700 oersteds and up and the rotary hysteresis loss increase with increase in field strength, reaching a maximum around 900-1250 oersteds and subsequently decreasing. The authors express their gratitude

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ACCESSION NR: AP3000937

to A. G. Titova for procuring the single crystals." Orig. art. has: 4 figures.

ASSOCIATION: Institut fiziki SO AN SSSR (Institute of Physics SO AN SSSR); Institute tsvetny*kh metallov im. M. I. Kalinina Krasnoyarskiy pedinstitut (Institute of Nonferrous Metals, Krasnoyarsk Teachers Institute)

SUBMITTED: 30Jan62

DATE ACQ: 11Jun63

ENCL: 00

SUB CODE: MA

NO REF SOV: 008

OTHER: 003

Card 2/2

DROKIN, A.I.; SUDAKOV, N.I.; GENDELEV, S.Sh.; IZOTOVA, T.P.; RYABINKINA, L.I.

Temperature dependence of the first anisotropy constant in
single crystals of iron-nickel ferrites. Fiz. met. i
metalloved. 17 no.5:684-688 My '64. (MIRA 17:9)

1. Institut fiziki Sibirskogo otdeleniya AN SSSR.

LAPTEY, D.A.; SAVCHENKO, M.K.; SUDAKOV, N.I.; IZOTOVA, T.P.

Anisotropy and magnetic structure of thin iron films. *Izv. AN*
SSSR. Ser. fiz. 28 no.1:187-190 Ja '64. (MIRA 17:1)

1. Institut fiziki Sibirskogo otdeleniya AN SSSR i Institut tsvetnykh
metallov im. M.I.Kalinina.

ACCESSION NR: AP4023405

S/0048/64/028/003/0545/0552

AUTHOR: Kirenskiy, L.V.; Drokin, A.I.; Dy*lgerov, V.D.; Sudakov, N.I.; Sinegubov, V.I

TITLE: Domain structure in ferrites and its dynamics in varying and rotating magnetic fields /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, 545-552

TOPIC TAGS: ferrite, domain structure, ferrite domain structure, garnet ferrite, garnet ferrite domain structure, spinel ferrite, spinel ferrite domain structure, hexagonal ferrite domain structure, double domain structure, domain wall fine structure

ABSTRACT: The domain structure of a number of ferrite single crystals having the garnet, spinel or hexagonal structure was investigated. The powder method of W.S. Elmore (Phys.Rev.51,10,1092, 1938) was employed to reveal the domains. The polarity of the domain boundaries was determined with the aid of the polar Kerr effect, employing a previously described technique (V.D.Dy*lgerov and A.I.Drokin, Kristallografiya, 5,6, 945, 1960); A.I.Drokin, V.D.Dy*lgerov and B.V.Beznosikov, Ibid.9,3,465,

Card 1/3

ACCESSION NR: AP4023405

1962). The Yb, Ho, Er and Gd garnet ferrites were obtained as single crystals from melts. Lead hexaferrite was also prepared in this way. Crystals of Co-Fe, Mn-Fe and Mg-Mn ferrites with the spinel structure were grown in an oxy-hydrogen flame. Spheres of 4 to 8 mm diameter were obtained. These were annealed above the Curie point and oriented in a magnetic field. The planes to be investigated were ground flat, polished and treated with hot sulfuric acid to destroy surface mosaic. Lead hexaferrite was found to have a domain structure similar to that of cobalt. The ferrites with the garnet structure had very complex domain structures, for which it does not seem possible to construct a model. "Stringy" walls, double banded walls, and curved walls were observed in different materials. The curved domain walls of gadolinium ferrite garnet would shift under the influence of an applied magnetic field. The domain structure of the spinel ferrites was somewhat less complex. The presence of double domain structure was established. Successive walls would have opposite polarity, and in the presence of a gradually increasing magnetic field alternate walls would first disappear, the remaining walls disappearing only when the field became stronger. Sometimes a single domain wall would separate into two under the influence of a field; in such a case the two new walls would have the same polarity as the old, thus interrupting the regular alternation of polarity. Wide do-

Card^{2/3}

ACCESSION NR: AP4023405

main walls were observed in which a fine structure could be perceived. Such complex walls exhibited alternations of polarity, as though they were composed of several walls having opposite polarities. It is suggested that the double domain structure of ferrites may be due to the interaction between the two magnetic sublattices, each striving to establish its own domain pattern. Orig.art.has: 5 figures.

ASSOCIATION: Institut fiziki Sibirskogo otdeleniya Akademii nauk SSSR (Institute of Physics, Siberian Division, Academy of Sciences, SSSR)

SUBMITTED: 00

DATE ACQ: 10Apr64

ENCL: 00

SUB CODE: PH

NR REF SOV: 014

OTHER: 010

Card 3/3

L 1704-66 EWT(1)/EWT(m)/EWP(w)/T/EWP(t)/EED-2/EWP(b)/EWA(c) IJP(c) JD/HW

ACCESSION NR: AP5021078

UR/0288/65/000/002/0103/0109

AUTHOR: Drokin, A. I.; Sudakov, N. I.; Sidorov, F. K.; Yarichina, K. V.

TITLE: Magnetic crystallographic anisotropy and losses due to rotary hysteresis in single crystals of cobalt iron ferrites

SOURCE: AN SSSR. Sibirskoye otdeleniye. Izvestiya. Seriya tekhnicheskikh nauk, no. 2, 1965, 103-109

TOPIC TAGS: magnetic anisotropy, crystal anisotropy, magnetic hysteresis, single crystal, ferrite, cobalt alloy, iron alloy

ABSTRACT: Object of the study was investigation of the temperature dependence of the anisotropic constants for single crystals of cobalt iron ferrites over a broad temperature interval, the effect of thermomagnetic treatment on the curves for the mechanical moments, and losses due to rotary hysteresis. The samples had the following composition: $Co_{0.24}Fe_{0.12}Fe_{0.66}O_4$ (with 1.2-1.4 mole% excess iron). To eliminate internal stresses, the samples were annealed for 24 hours at 600C with subsequent slow cooling. The constants of magnetic crystallo-

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L 1704-66

ACCESSION NR: AP5021078

graphic anisotropy were determined by measuring the rotary mechanical moments acting on the sample in the field of a rotating electromagnet. Measurement error did not exceed 3%. Temperature interval was from the temperature of boiling oxygen to the Curie point. Losses due to rotary hysteresis were determined by planimetric measurement of the area between the curves for the mechanical moments during forward and reverse rotation of the magnetic field in the plane. Error was 6-8%. Magnetic saturation was determined by a ballistic method, and the initial magnetic permeability by the resonance method at a frequency of 10 megacycles. The first constant of magnetic crystallographic anisotropy for the ferrites tested increases with a decrease in the temperature, at first slowly and then, in the temperature interval 400-200K, rapidly, and then again slowly, always remaining positive. At room temperature, it is equal to $2.9 \cdot 10^6$ erg/cm³; at the temperature of boiling oxygen it is $7.46 \cdot 10^6$ erg/cm³. Thermomagnetic treatment of a single crystal (heating from the temperature of boiling oxygen to room temperature in a field of 10,000 oersteds) causes induced anisotropy. At room temperatures and above, losses due to rotary hysteresis have normal character. They increase with an increase in the field, attain a maximum, and then decline

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ACCESSION NR: AP5021078

12

to zero. At low temperatures, these losses are very great and do not completely disappear even in a field of 40,000 oersteds. As a result of thermomagnetic treatment, losses due to rotary hysteresis decrease, their maximum shifts to the side of high fields, and they disappear in lower fields. "In conclusion we express our deep indebtedness to T. M. Perekalina^{11/55} and A. A. Askochenski^{11/55} for furnishing us the samples of single crystal ferrites." Orig. art. has: 3 formulas and 6 figures

ASSOCIATION: Institut fiziki, Sibirskogo otdeleniya AN SSSR, Institut tsvetnykh metallov im. M. I. Kalinina, Krasnoyarsk (Institute of Physics, Siberian Branch AN SSSR, M. I. Kalinin Institute of Nonferrous Metals, Krasnoyarsk)^{11/55}

^{11/55}
SUBMITTED: 10Feb63

ENCL: 00

SUB CODE: SS

NR REF SOV: 005

OTHER: 014

Card 3/3

DP

L 6461-66 EWT(m)/EWP(t)/EWP(e)/EWP(b) IJP(c) JD/HW

ACCESSION NR: AP5019849

UR/0181/65/007/008/2362/2366

AUTHOR: Sudakov, N. I.; Gendelev, S. Sh.; Drokin, A. I.

TITLE: Measurement of rotational hysteresis loss in nickel cobalt ferrite single crystals resulting from heat treatment and magnetic annealing

SOURCE: Fizika tverdogo tela, v. 7, no. 8, 1965, 2362-2366

TOPIC TAGS: magnetic hysteresis, magnetic domain structure, magnetic domain boundary, ferrite, nickel containing alloy, cobalt containing alloy

ABSTRACT: This is a continuation of earlier work by the authors (FMA v. 13, 788, 1962; FTT v. 4, 2293, 1962; Izv. vuzov fizika no. 2, 141, 1963 and elsewhere), where it was shown that the rotational hysteresis losses increase with increasing magnetic field in spite of the theoretical predictions, owing to the radical re-alignment of the domain structure. The present article reports the first results on nickel-cobalt ferrites $Ni_{0.71}Co_{0.03}Fe_{0.20}^{2+}Fe_{0.04}^{3+}O_4$ grown by the Verneuil method. The uniform magnetic field (up to 30 kOe) was rotated in a plane parallel to the (100) surface of the crystal. The test procedure is briefly described. Prolonged annealing at 300C and subsequent slow cooling leads to a decrease of the loss in weak and medium fields at room temperature and to an increase of the loss at higher temperatures. This is attributed to redistribution of the ions as a result of

Card 1/2

L 26668-66 EWT(1)/EWT(m)/EWA(d)/T/EWP(t) IJP(c) JD/HW/AT

ACC NR: AP6010409

SOURCE CODE: UR/0126/66/021/003/0423/0429

AUTHORS: Drokin, A. I.; Sudakov, N. I.; Gendelev, S. Sh.; Ryabinkina, L. I.

76
B

ORG: Institute for Physics, SO AN SSSR (Institut fiziki SO AN SSSR)

TITLE: Influence of ion diffusion during thermal and thermomagnetic treatment on the magnetocrystallographic anisotropy in single crystals of nickel-cobalt ferrites

18

SOURCE: Fizika metallov i metallovedeniye, v. 21, no. 3, 1966, 423-429

18

21

27

18

TOPIC TAGS: ferrite, magnetic crystal, magnetic anisotropy, nickel compound, cobalt compound, crystal anisotropy, temperature dependence, electric conductivity, magnetic field, thermomagnetic effect, single crystal

ABSTRACT: The effect of long-term, low-temperature annealing on the temperature dependence of the first magnetocrystallographic anisotropy constant and on electrical conductivity of single crystals of nickel-cobalt ferrites was determined. The effect of cooling the specimen in a magnetic field of 15 000 oersteds on the magnetic anisotropy in the latter was also studied. The experiments were carried out over the temperature interval of -200 to 300C, and the results are presented graphically (see Fig. 1). It was found that the temperature dependence of K_1 , the first magnetocrystallographic constant, obeyed the relationship

$$K_1 = K_0 e^{-\alpha T^2}$$

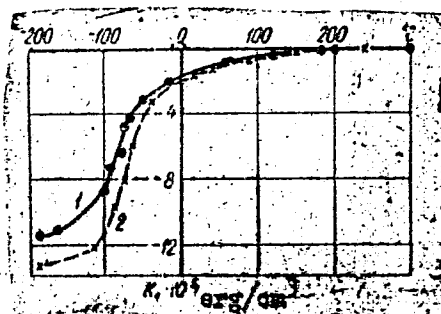
Card 1/2

UDC: 538:245

L 26668-66

ACC NR: AP6010409

Fig. 1. Temperature dependence of the first anisotropy constant of a nickel-cobalt ferrite: 1 - prior to annealing; 2 - after a 48-hour annealing period at 3000.



proposed by N. L. Bryukhatov and L. V. Kirenskiy (ZhETF, 1938, 8, 198), where K_1 is the first magnetocrystallographic constant, K_0 - its value at 0K, α - a constant, and T - the absolute temperature. It was also found that annealing increases the absolute magnitude of the anisotropy constant and electrical resistance and that thermomagnetic treatment induces axial anisotropy. It is concluded that the observed effects are due to migration of ions in the ionic lattice. Orig. art. has: 6 graphs and 5 equations.

SUB CODE: 20/ SUBM DATE: 16Nov64/ ORIG REF: 006/ OTH REF: 009

Card 2/2 BLG

ACC NR: AP6036985

(A,N)

SOURCE CODE: UR/0181/66/008/011/3363/3365

AUTHOR: Drokin, A. I.; Sudakov, N. I.; Gendelev, S. Sh.; Yanitskiy, V. K.

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

TITLE: Influence of heat treatment on the magnetic-crystallographic anisotropy and rotation-hysteresis loss in lithium pentaferrite single crystals

SOURCE: Fizika tverdogo tela, v. 8, no. 11, 1966, 3363-3365

TOPIC TAGS: lithium compound, magnetic anisotropy, magnetic hysteresis, temperature dependence, annealing

ABSTRACT: The authors have investigated the influence of heat treatment on the temperature dependence of the anisotropic constant and the field dependence of rotation-hysteresis losses in a temperature range much larger than in earlier investigations by others. In addition they investigated the temperature dependence of the magnetic-anisotropy constants in a wider range of temperatures. The single crystals were grown by the method described by V. N. Seleznev et al. (Voprosy radioelektroniki, ser. III, no. 9, 27, 1962) from a charge having a composition $6\text{Li}_2\text{CO}_3 \cdot 3\frac{1}{2}\text{Fe}_2\text{O}_3 \cdot 60\text{PbO}$, resulting in a crystal having the formula $\text{Li}_{0.48}\text{Fe}_{2.25}\text{O}_4$. The tests were made on a spherical sample. The magnetic-anisotropy constant was determined by torque measurements in fields of 20 000 Oe. The hysteresis losses were calculated from the area between the torque curves plotted in both field directions during the reversal of magnetization cycle. The results have shown that quenching in air from 800C increases

Card 1/2

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Work of the sections of the A.S. Popov Scientific and Technical Society of Radio and Electronics. Elektrosvaz' 17 no. 3:71-72 Mr '63. (MIRA 16:4)

1. Uchenyy sekretar' Tsentral'nogo pravleniya Nauchno-tehnicheskogo obshchestva radiotekhniki i elektrosvyazi imeni A.S. Popova.

(Radio)

(Electronics)

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Results of the All-Union public inspection of the A.S.Popov
Scientific and Technical Society of Radio and Electronics for
1962. Elektrosviaz' 17 no.8:74 Ag '63. (MIRA 16:8)
(Research) (Electronics)

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[Preparation of timber by biological drying] Zagotovka lesa
s biologicheskoi sushad'yu. Syktyvkar, Komi knizhnoe izd-vo,
1964. 29 p. (MIRA 18.7)

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concerns. Vest. svyazi SA no.10:02 G '64.

(MIRA 17:12)

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obshchestva radioelektroniki i elektrosvyazi imeni
A.S. Popova.

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Microscopy. Radiotekhnika 18 no.7:77-79 J1 '63. (MIRA 16:10)

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Radiotekhnika 19 no.6:80 Je '64.

(MIRA 17:10)

SUDAKOV, N. P.

BELEN'KIY, I.A.; YESIMONTOVSKIY, M.G.; ZAKRUTKIN, V.F.; SUDAKOV, N.P.;
ALEKSEYEV, V.N., kandidat tekhnicheskikh nauk, retsentsent.

[Manual on repairing automobile tires] Rukovodstvo po remontu avtomobil'nykh shin. Leningrad, Gos. nauchno-tekh. izd-vo mashinostroit. i sudostroit. lit-ry, 1953. 136 p. (MLRA 7:5)

(Automobiles--Tires)

SUDAKOV, P. Ye.

SUDAKOV, P. Ye.

Level measurement in the evaporator. Neft.khoz. 32 no.3:36-38 Mr '54.
(MLRA 7:4)
(Cracking process)

SUDAKOV, P.M.

New photoelectric pyrometer. [Izd.] LONITOMASH no.33:283-289
'54. (MLRA 8:2)
(Pyrometers and pyrometry)

720 08/26/2000 1511
SUDAKOV, P.M.; DOMSKOY, A.V., prof., doktor tekhn.nauk, retsenzent; FOGEL',
A.A., kand.tekhn.nauk, red.; SPITSYN, M.A., kand.tekhn.nauk, red.;
SLUKHOTSKIY, A.Ye., kand.tekhn.nauk, red.; GLUKHANOV, N.P., kand.
tekhn.nauk, red. BAMUNER, A.V., inzh., red.; SPERANSKAYA, O.V.,
tekhn.red.

[Instruments and measuring in high-frequency heating] Pribory i
izmereniya pri vysokochastotnom nagreve. Pod red. A.A.Fogelia.
Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit. lit-ry, 1957.
54 p. (Bibliotekha vysokochastotnika-termista, no.16) (MIRA 11:2)
(Electric heating--Measurement)
(Electric meters)

SOV/137-58-10-21261

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 10, p 117 (USSR)

AUTHOR: Sudakov, P. M.

TITLE: The Metering of Induction Heating in the Heat Treatment of Machine Parts (Dozirovaniye induktsionnogo nagreva pri termicheskoy obrabotke detaley)

PERIODICAL: V sb.: Prom. primeneniye tokov vysokoy chastoty. Riga, 1957, pp 258-262

ABSTRACT: A high-frequency-current relay for metering heat (RMH) automatically, whereby the duration of heating with a high-frequency current is made dependent on the voltage across the inductor, is described. The device was developed by the Scientific Research Institute. The main element of the RMH is a measuring mechanism of the "ferrodynamic" system, equipped with magnetic-induction damping. RMH can be used in the method of simultaneous heating on both sonic and radio frequencies and permits metering exposures of from fractions of seconds to 2 - 3 minutes' duration. The experimental model of RMH was successfully tested under industrial conditions on the Sestroretsk plant. 1. Industrial equipment--Heat treatment heating--Control systems 2. Induction heating--Control systems T.I.

Card 1/1

ACCESSION NR: AR4034478

S/0058/64/000/003/D056/D056

SOURCE: Ref. zh. Fiz., Abs. 3D439

AUTHOR: Sudakov, P. M.

TITLE: FEP-60 photoelectric pyrometer

CITED SOURCE: Tr. N.-i. in-ta tokov vy*sokoy chastoty*, vyp. 4,
1963, 108-113

TOPIC TAGS: pyrometer, photoelectric pyrometer, infrared pyrometer,
black body radiation measurement, lensless optical system, pyrometer
time constant, photoindicator probe

TRANSLATION: An infrared pyrometer is described which measures
temperature in the 200--1400C range with an error of $\pm 10C$ in the
temperature of an absolutely black body. The time constant of the
instrument is not less than 0.01 sec, the minimum diameter of the

Card 1/2

ACCESSION NR: AR4034478

sighted surface is ~2 mm. A lensless optical system is used in the pyrometer, the radiation from the surface of the body (whose temperature is measured) being guided to the photoindicator along a probe provided with a quartz light guide.

DATE ACQ: 10Apr64

SUB CODE: PH

ENCL: 00

Card 2/2

SUDAKOV, P.M.; DONSKOY, A.V., doktor tekhn. nauk, prof., retsenzent;
FOGEL', A.A., kand. tekhn. nauk, red.

[Equipment and measurements in high-frequency heating] Pri-
bory i izmereniia pri vysokochastotnom nagreve. Izd.2.,
ispr. i dop. Pod. red. A.A.Fogelia. Moskva, Mashinostroenie,
1965. 73 p. (MIRA 18:12)

GELLER, Z.I.; SUDAKOV, P.Ye.; RASTORGUYEV, Yu.L.

Measurement and control of the viscosity of petroleum products
in the processing line. Khim. i tekhnol. 1 masl 4 no.3:
13-16 Mr '59. (MIRA 12:4)

1. Groznenskiy neftyanoy institut.
(Petroleum products) (Viscosimetry)

GELLER, Z.I.; RASTORGUYEV, Yu.L.; SUDAKOV, P.Ye.

Organization and thermostatic regulation of streams for quality
analyzers. Izv. vys. ucheb. zav.; neft' i gaz 4 no.11:95-98 '61.
(MIRA 17:2)

1. Groznenskiy neftyanoy institut.

GELLER, Z.I.; RASTORGUYEV, Yu.L.; SUDAKOV, P.Ye.

Device for balancing temperature fluctuations of a measurable medium attached to the apparatus with differential transformer networks.
Khim.i tekhn.topl.i masel 6 no.12:33-37 D '61. (MIRA 15:1)

1. Groznenskiy neftyanoy institut.
(Petroleum refineries--Equipment and supplies)

GELLER, Z.I.; RASTORGUYEV, Yu.L.; SUDAKOV, P.Ye.; ANTIMIROV, M.Ya.;
Prinimali uchastiye: DIMITRIYENKO, O.M.; BOYANOVICH, V.A.

GNI automatic densitometer for liquids. Izv.vys.ucheb.zav.;
neft' i gaz 5 no.2:109-116 '62. (MIRA 15:7)

1. Groznenskiy neftyanoy institut.
(Densitometers)
(Petroleum products--Density)

GELLER, Z.I.; RASTORGUYEV, Yu.L.; SUDAKOV, P.Ye.; REYKHERT, L.A.,
ved. red.; YASHCHURZHINSKAYA, A.B., tekhn. red.

[Controlling, measuring, and regulating apparatus used in
petroleum refining; instructions for laboratory work] Kontrol'-
no-izmeritel'nye i reguliruiushchie pribory v neftepereraba-
tyvaiushchei promyshlennosti; rukovodstvo k laboratornym rabo-
tam. Leningrad, Gostoptekhizdat, 1963. 250 p. (MIRA 16:11)
(Petroleum refineries--Equipment and supplies)
(Automatic control) (Measuring instruments)

MIRANISEV, George, Yakovlevich; SUDAKOV, P.Ya., retsentsent;
KAMINSKIY, M.L., retsentsent; STOLGANIK, G.Ya., ved.
red.

[Assembly, adjustment, and operation of devices and
systems of automatization and control in the petroleum
industry] Montazh, naladka i ekspluatatsiia priborov i
sistem avtomatizatsii i kontrolya v neftianoi promysh-
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BAGRATUNI, Gogram Vagramovich; SUDAKOV, S.G., redaktor; KUZ'MIN, G.M.
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[Karl Friedrich Gauss; a brief sketch of his geodetic research]
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(Gauss, Karl Friedrich, 1777-1855)

SUDAKOV, S.G.; VIROVETS, A.M.; KURYTSIN, S.V.; PAVLOV, V.F.; PODOBEDOV, N.S.;
POPOV, V.A.; RYTOV, A.V.; SOKOLOVA, N.A.; SOKOLOV, M.N.; TROITSKIY,
B.V.; SHNEYDERMAN, E.S.

[Instructions for topographical surveying; scale 1:5000 and 1:2000]
Instruktaiia po topograficheskoi s^eemke v masshtabakh 1:5000 i 1:2000.
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grafii.

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SUDAKOV, S.G.; ALEKSANDROV, T.F.; BAGROV, M.A.; BULANOV, A.I.; KAMENSKAYA, M.V.;
KUZ'MIN, B.S.; LITVINOV, B.A.; SINYAGINA, M.I.; TIMOFEEV, A.A.; EMTIN, I.I.;
SINYAGINA, V.I.

[Instructions for class I, II, III and IV leveling] Instruktsiia po
nivelirovaniu I, II, III i IV klassov. Moskva, Izd-vo geodesicheskoi
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(Geodesy)

SUDAKOV, S.G.,

CHEBOTAREV. Aleksandr Stepanovich, professor, zaslushenny deyatel' nauki i tekhniki, doktor tekhnicheskikh nauk; SUDAKOV, S.G., redaktor; INOZEMTSEVA, A.I., redaktor; KUZ'MIN, G.W., tekhnicheskii redaktor.

[Geodesy] Geodeziia. Izd. 200e, ispr. Moskva, Izd-vo geodezicheskoi lit-ry. Pt. 1, 1955. 626 p. (MLRA 8:12)
(Geodesy)

SUDAKOV, S.G.; ALEKSANDROV, T.F.; YELISEYEV, S.V.; IZOTOV, A.A.; KUZ'MIN, B.S.; LARIN, D.A.; LITVINOV, B.A.; MOLODENSKIY, M.S.; POVALYAYEV, P.I.; RYTOV, A.V.; TIMOFEYEV, A.A.; TOMILIN, A.F.; SHISHKIN, V.E. KUZ'MIN, G.M., tekhnicheskiy redakter.

[Triangulation on the 1,2,3 and 4 order] Instruktsiia po triangulatsii 1,2,3 i 4 klassev. Moskva, Izd-vo geodesicheskoi lit-ry, 1956. 307 p. (MLRA 9:5)

1. Russia (1923- U.S.S.R.) Glavnoye upravleniye geodezii i kartografi. (Triangulation)

SUDAKOV, S.G.

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1:25,000 and 1:10,000. Geod.i kart. no.3:7-17 My '56. (MLRA 9:10)
(Triangulation) (Surveying)

SUDAKOV, S.G.

International Geodetic Association. Geod.i kart. no.6:60-75 Ag '56.
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