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"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7

AUTHORS: Glazov A. A. and Shur Ya. S. SOV/126-6-1-6/33

TITLE: Thermomagnetic Treatment and Processes of Ordering (Termomagnitnaya obrabotka i protsessy uporyadocheniya) II Influence of Thermomagnetic Treatment on the Structural Transformations in Ordering Alloys (II Vliyaniye termomagnitnoy obrabotki na strukturnyye prevrashcheniya v uporyadochivayushchikhsya splavakh)

PERIODICAL: Fizika Metallov i Metallovedeniye 1958 Vol 6 Nr 1 pp 52-59 (USSR)

ABSTRACT: In earlier work (Ref.1) the authors showed that the thermomagnetic treatment in various ordering alloys (78-permalloy, 68-permalloy, permivar and permenduR) can be effective also when the external magnetic field is applied only at temperatures above the critical ordering temperature T_c. Furthermore, it was established that the curve of the dependence of the saturation magnetization on the temperature $I_s(\vartheta)$ in specimens subjected to thermomagnetic treatment coincide with the respective curves of alloys in disordered and non-ordered alloys. From that it was concluded that the magnetic single-axis character caused by thermomagnetic treatment is not due to ordinary ordering of the crystal

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307/126-6-1-8/37

Thermomagnetic Treatment and Processes of Ordering. II Influence of Thermomagnetic Treatment on the Structural Transformations in Ordering Alloys

[illegible] to some other representation of the atoms. Neel and Tournier et al. (Ref.2) arrived at similar [illegible] particular type of "crystallo-[illegible] structure." [illegible] pointed out that in the primary stage, [illegible] from the other [illegible] the thermomagnetic treatment is less effective. As [illegible] the process of an ordered structure [illegible] the progress of the processes [illegible] thermomagnetic treatment to establish [illegible] structure [illegible]. Therefore it [illegible] that the processes taking place during thermomagnetic treatment depend on the structural state of the alloy. To elucidate the features of the structural state of ferromagnetics after thermomagnetic treatment, the authors investigated the effect produced by thermomagnetic treatment on [illegible] of certain ordering alloys after they have been brought preliminarily into the order or disorder state and also to study the kinetics of the process of ordering of

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SOV/126-6-1-6/33

Thermomagnetic Treatment and Processes of Ordering. II Influence of Thermomagnetic Treatment on the Structural Transformations in Ordering Alloys

preliminarily thermomagnetically treated specimens. The investigations were effected on 60 x 4 x 0.5 mm specimens of the alloys 78-permalloy, 65-permalloy and perminvar (34% Ni, 34% Fe, 29% Co, 3% Mo). For producing the ordered state, the specimens were annealed at a temperature slightly below the critical ordering temperature T_c for durations up to 100 hours. A disordered structure was produced by hardening in oil from 700°C. The thermomagnetic treatment consisted of slow cooling from 700°C inside a magnetic field of 50 or 200 Oe. For evaluating the effectiveness of the thermomagnetic treatment the saturation magnetostriction was measured, which permits evaluating the degree of the magnetic texture and also the coercive force which gives an idea on the change of the magnetic properties during the thermomagnetic treatment. The same parameters enabled conclusions on the structural state of the alloy. The experimental results which are graphed in Figs. 1-5 allow certain conclusions relating to the structural

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Thermomagnetic Treatment and Processes of Ordering. II Influence of Thermomagnetic Treatment on the Structural Transformations in Ordering Alloys

state of a ferromagnetic which was annealed inside a magnetic field. It was found that this state is not the state of ordinary order including directional order. This view is supported by the earlier established fact that the thermomagnetic treatment can be effected at temperatures above T_a where ordering cannot take place. Furthermore, this is confirmed by the fact that the curve of the temperature dependence of the saturation magnetisation of specimens which have been subjected to thermomagnetic treatment coincide with the curves obtained for specimens of a non-ordered alloy. On the other hand, this state is not the ordinary state of chaotic distribution of the atoms according to the theo of Bozorth; this view seems to be borne out by the fact that, in a ferromagnetic annealed inside a magnetic field the ordering takes place more slowly than in a non-ordered alloy. Such a difference in the kinetics of ordering permits the assumption that the structure of the non-ordered specimen and of specimens annealed insid

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Thermomagnetic Treatment and Processes of Ordering. II Influence of Thermomagnetic Treatment on the Structural Transformations in Ordering Alloys

a magnetic field differ. It can be anticipated that due to annealing inside a magnetic field a particular structural state will occur in the ferromagnetic which differs from the ordinary ordered state or from the directional state as well as from the disordered state. It can, therefore, be assumed that a small quantity of atoms participate in the formation of this particular structural state, since during thermomagnetic treatment of disordered alloys their saturation magnetization does not change and the formation of a magnetic uniaxiality during thermomagnetic treatment proceeds faster than the ordering of the alloy. It is most likely that the structural state established during thermomagnetic treatment represents an "orientation super-structure" which was been predicted theoretically by Neel and Taniguchi et alii (Ref.2)

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Thermomagnetic Treatment and Processes of Ordering. II Influence of Thermomagnetic Treatment on the Structural Transformations in Ordering Alloys

Thermomagnetic figures and [illegible] in Single [illegible]

ASSOCIATION: [illegible] (Institute of Metal Physics, [illegible] of the Ac. Sci. USSR)

SUBMITTED: [illegible] 1957

Card 6/6

1. Alloys--Magnetic factors 2. Alloys--Research 3. Magnetic--Preparation 4. Magnetic--[illegible]

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"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7

SOV/126-6-5-43/43

AUTHORS: Shur, Ya.S., and Glazer, A.A.

TITLE: Thermomagnetic Treatment and Ordering Processes (Termomagnitnaya obrabotka i protsessy uporyadocheniya) Part III. Investigation of the Effect of Thermomagnetic Treatment on the Magnitude of Electrical Resistance of Ordering Soft Magnetic Alloys (III. Issledovaniye vliyaniya termomagnitnoy obrabotki na velichinu elektrosoprotivleniya uporyadochivayushchikhsya myagkikh magnitnykh splavov)

PERIODICAL: Fizika Metallov i Metallovedeniye, 1958, Vol 6, Nr 5, pp 958-960 (USSR)

ABSTRACT: 1. Earlier papers published by the authors (Refs 1,2) dealt with the effect of thermomagnetic treatment (t.m.t.) on ordering processes; it was shown that as a result of t.m.t., a new structural state may appear, which is different from the ordered and disordered states. These results were obtained by measurements of purely magnetic properties of certain alloys. To obtain a fuller picture of this new structural state, it was desirable to study also other physical properties, especially electrical resistance, which is a sensitive indication of the degree of ordering in alloys. The authors (Ref 2) showed that measurements of electrical resistance of ordering soft

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SOV/126-6-5-43/43

Thermomagnetic Treatment and Ordering Processes. Part III. Investigation of the Effect of Thermomagnetic Treatment on the Magnitude of Electrical Resistance of Ordering Soft Magnetic Alloys

magnetic alloys of various structures may answer the following two questions in connection with the new structural state: a) whether the superstructure of an ordered sample is disrupted by subsequent annealing in a magnetic field at a temperature lower than the critical temperature of ordering T_c ; b) whether the presence of a magnetic field during annealing of a disordered sample at a temperature lower than T_c affects the kinetics of ordering. The present paper deals with these two questions.

2. Electrical resistance of 50%-Permalloy and Permivar alloys, in the form of strips of 80 x 4 x 0.4 mm dimensions, was measured. Measurements were carried out by a compensation method using a low-resistance Dusselhorst potentiometer with a relative error of 0.08%. In addition to electrical resistance R_o , the authors measured the value of electrical resistance R_s in a magnetic field which produces saturation of the samples.

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The value of R_s, in contrast to R_o, does not depend on magnetic texture. Both these quantities were measured at 0 °C (in a thermostat) and -196 °C (in liquid nitrogen). The effect of t.m.t. could be judged from the change of the coercive force H_c (at 20 °C), from R_o and from

$$\frac{\Delta R}{R} = \frac{R_s - R_o}{R_o} .$$

3. To answer the first question, samples were first ordered by 96-hour annealing at 460 °C and then annealed for 5 hours at 450 °C in a magnetic field of 200 Oe. Then the samples were hardened in vacuum by heating to 700 °C. After each such treatment (ordering, annealing in a magnetic field, hardening), values of R_o, R_s and H_c were measured. The results obtained are given in Table 1:

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Thermomagnetic Treatment and Ordering Processes. Part III. Investigation of the Effect of Thermomagnetic Treatment on the Magnitude of Electrical Resistance of Ordering Soft Magnetic Alloys

Treatment	Temperature	78-Permalloy H_c, Oe, 20°C	78-Permalloy $R_0 \cdot 10^5$ Ω	78-Permalloy $R_s \cdot 10^5$ Ω	78-Permalloy $\Delta R/R$, %	Perminvar H_c, Oe, 20°C	Perminvar $R_0 \cdot 10^5$ Ω	Perminvar $R_s \cdot 10^5$ Ω	Perminvar $\Delta R/R$, %
96-hr annealing at 460°C (ordering)	0°C	0.21	1332	1358	1.41	0.57	4782	4792	0.21
	-196°C		1151	1192	3.56		3838	3849	0.29
5-hr annealing at 450 °C in a field of 200 Oe (t.m.t.)									
Hardening in vacuum from 700 °C (disordering)									

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Thermomagnetic Treatment and Ordering Processes. Part III. Investigation of the Effect of Thermomagnetic Treatment on the Magnitude of Electrical Resistance of Ordering Soft Magnetic Alloys

Table 1 shows that R_0 and R_s of ordered and disordered samples differ markedly both at 0 °C and at -196 °C The authors' results obtained at -196 °C contradict the results of Kondorskiy and Ozhigov (Ref 4), who reported a decrease of electrical resistance on ordering. This difference may be due to the difference in the degree of order (short-range and long-range) of the samples prepared by the authors and the samples used by Kondorskiy and Ozhigov. After t.m.t., the values of H_c and $\Delta R/R$ of 78-Permalloy fell a little, which indicates appearance of a weak magnetic texture. The value of R_s, which is not related to magnetic texture, was not affected. After t.m.t. of Perminvar (Table 1), the value of $\Delta R/R$ approached 0 due to appearance of clear magnetic texture. Again, the value of R_s remained unchanged within the limits of experimental error. The authors conclude from these results that

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SOV/126-6-5-43/43

Thermomagnetic Treatment and Ordering Processes. Part III. Investigation of the Effect of Thermomagnetic Treatment on the Magnitude of Electrical Resistance of Ordering Soft Magnetic Alloys

superstructure is not destroyed by t.m.t. of ordered samples at temperatures below T_c. If the superstructure was affected, the value of R_s at 0 °C would have decreased and the value of R_s at -196 °C would have increased.

4. To answer the second question, a hardened sample was annealed for 5 hours at 450 °C with and without a 20 Oe magnetic field. The results of measurement of H_c, R_o and R_s after each treatment are given in Table 2:

(Heading as per Table 1)

Hardening in vacuum from 700 °C (disordering)
Annealing for 5 hrs at 450 °C (partial ordering)
Annealing for 5 hrs at 450 °C and 200 Oe (t.m.t.)

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Thermomagnetic Treatment and Ordering Processes. Part III. Investigation of the Effect of Thermomagnetic Treatment on the Magnitude of Electrical Resistance of Ordering Soft Magnetic Alloys

Table 2 shows that t.m.t. of disordered samples of 78-Permalloy and Perminvar produces a clear magnetic texture - in both alloys the value of $\Delta R/R$ decreases considerably. The value of R_s is the same irrespective of whether the sample was annealed with or without a field. In both cases, the value of R_s at 0 °C fell and at -196 °C increased compared with the value of R_s of a hardened sample. This shows that annealing produces ordering of samples. The authors conclude that the kinetics of ordering of 78-Permalloy and Perminvar is not affected if the samples are in a magnetic field during annealing. If the kinetics of ordering were affected by the presence of a magnetic field, then the value of R_s after 5-hour annealing at 450 °C in a field would have been different from the values after a similar annealing without a field.

5. The authors finally conclude that the special structural state produced by t.m.t. involves such a small

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Thermomagnetic Treatment and Ordering Processes. Part III. Investigation of the Effect of Thermomagnetic Treatment on the Magnitude of Electrical Resistance of Ordering Soft Magnetic Alloys

number of atoms that formation or retention of the ordered structure is not affected. This is a complete translation. There are 2 tables and 4 Soviet references.

ASSOCIATION: Institut fiziki metallov AN SSSR (Institute of Metal Physics of the Ac.Sc.USSR)

SUBMITTED: July 5, 1958

Card 8/8

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"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7

SOV/48-22-10-9/23

AUTHORS: Glazer, A. A., Shur, Ya. S.

TITLE: On the Nature of the Effect of Thermomagnetic Treatment on Magnetically Soft Ferromagnetic Materials (O prirode effekta termomagnitnoy obrabotki v magnitnomyagkikh ferromagnetikakh)

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1958, Vol 22, Nr 10, pp 1205 - 1211 (USSR)

ABSTRACT: No conclusive experimental data have hitherto been presented indicating a connection between the effect of the thermomagnetic treatment and the process of coordination. In the present work the authors examined the problem, whether such a connection exists. The temperature range in which the thermomagnetic treatment is effective was determined. The influence of the thermomagnetic treatment upon the temperature dependence of the saturation magnetization was investigated. The kinetics of thermomagnetic treatment of coordinated and non-coordinated alloys as well as the kinetics of coordination of thermomagnetically treated alloys were examined. The investigations showed that the long-range order does not play any decisive role in the mechanism of the thermomagnetic treatment. This obviously proceeds

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On the Nature of the Effect of Thermomagnetic Treatment on Magnetically Soft Ferromagnetic Materials 307/48-22-10-9/23

firstly from the fact that the thermomagnetic treatment is effective also at temperatures higher than the critical temperature, and secondly that after the thermomagnetic treatment the saturation magnetization remains the same as in the disordered state. The state appearing after the thermomagnetic treatment is not the same as in the case of a common disordered distribution of the atoms. The kinetics of coordination is different in disordered and in thermomagnetically treated samples. The state occurring due to a thermomagnetic treatment differs from the coordinated as well as from the disordered state and leads to a magnetic uniaxiality. Apparently it is a particular structural state in the formation of which only a small number of atoms are participating. As this state is destroyed if coordination occurs due to the action of electrostatic forces it may be assumed that this structure is formed under the action of magnetic forces. Such a structure was predicted by Neel (Ref 4). There are 4 figures, 1 table, and 6 references, 1 of which is Soviet.

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On the Nature of the Effect of Thermomagnetic Treatment on Magnetically Soft Ferromagnetic Materials SOV/48-22-10-9/23

ASSOCIATION: Institut fiziki metallov Akademii nauk SSSR (Institute of Metal Physics, AS USSR)

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APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7"

"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7

AUTHORS: Shur, Ya. S., Shtol'ts, Ye. V. and Glazer, [illegible]

TITLE: A Change in the Domain Structure of Ferromagnetically Uniaxial Ferromagnetics in a Magnetic Field

PERIODICAL: Fizika metallov i metallovedeniye, Vol [illegible], 1959, No 5, pp 685-688 (USSR)

ABSTRACT: Powder patterns, representing domain structure, were obtained for an MnBi crystal whose hexagonal axis (easy magnetization axis) practically coincided with the sample surface. In the absence of an external field the whole crystal is seen to consist of bands, whose boundaries appear as black lines due to powder deposits (Fig 1a); these boundaries separate regions with antiparallel orientation of magnetization [illegible]. When a magnetic field is applied at right angles to the surface gradually increased to 600 oe (Fig 1b) the powder deposits at some domain boundaries become broader and thinner at others. A further increase of the applied field to 3[illegible] oe (Fig 1B) produces complete disappearance of those boundaries which were gradually becoming thinner and thinner. Such a change in the domain structure contradicts the accepted theories, indicating that the

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SOV/126-8-5-6/29

A Change in the Domain Structure of Magnetically Uniaxial Ferromagnetics in a Magnetic Field

results obtained by the powder-pattern technique in strong fields are open to question. For this reason the authors studied domain structure of MnBi in two ways: using the powder-pattern technique and the magneto-optical polar Kerr effect (Ref 3). The latter technique showed the domain surfaces rather than the domain boundaries. The Kerr effect results are shown in Fig 2. Fig 2a represents the domain structure in zero external field; the boundaries between the dark and light regions coincide exactly with the boundaries found by the powder-pattern technique (Fig 1a). The Kerr effect shows (Fig 2b) that application of a 3000 Oe field at right angles to the domain boundaries does not affect the initial domain structure. Both methods of domain-structure study can be used simultaneously: domains are revealed by the Kerr effect in a polarizing microscope and the same microscope is used to observe simultaneously the magnetic powder patterns. The results (Fig 3) show clearly that in strong fields the powder-pattern technique fails to show the true domain structure in

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A Change in the Domain Structure of Magnetically Uniaxial Ferromagnetics in a Magnetic Field

magnetically uniaxial crystals when the latter are subjected to magnetic fields at right angles to the easy magnetization axis. One possible reason for this effect may be an interaction between the external magnetic field and the [illegible] particles used in the powder-pattern technique [ref 2]. It is also possible that the effect is due to some complex processes occurring at the domain boundaries themselves. Using the Kerr effect the authors found that when fields of increasing intensity are applied at right angles to the easy-magnetization axis the domains are gradually distorted, are split into smaller parts and finally disappear on approach to [illegible]. The authors conclude that the magnetization process in a magnetically uniaxial ferromagnetic in fields at right angles to the easy magnetization axis involves rotation of the magnetization vectors in each domain in such a way as to reach alignment with the field direction.

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There are 3 figures and 3 references, of which 2 are English and 1 mixed (English and Russian).

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A Change in the Domain Structure of Magnetically Uniaxial Ferromagnetics in a Magnetic Field

ASSOCIATION: Institut fiziki metallov AN SSSR (Institute of Physics of Metals, Academy of Sciences, USSR)

SUBMITTED: August 21, 1959

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E032/E414

18.1141

AUTHORS: Glazer, A.A., Magat, L.M. and Shur, Ya.S.

TITLE: Thermomagnetic Treatment and Ordering Processes. IV. A Study of the Effect of Thermomagnetic Treatment on the Crystal Lattice Parameter in the Case of Ordering Soft Magnetic Alloys

PERIODICAL: Fizika metallov i metallovedeniye, 1960, Vol 9, Nr 3, pp 467-469 (USSR)

ABSTRACT: It has been shown experimentally that thermomagnetic treatment (cooling in a magnetic field) in the case of soft magnetic materials, which leads to the appearance in the ferromagnetic of single axis magnetism, is effective only in ordering alloys. In the present work, a study was made of the crystal lattice parameter in the case of 78-permalloy (78% Ni, 22% Fe) and perminvar (34% Fe, 29% Co, 34% Ni, 3% Mo). The specimens were in the form of strips 60 x 4 x 0.2 mm. The magnetic and electrical properties of the specimens were reported earlier (Ref 1,2). The lattice parameter was determined for specimens in different structural states namely, disordered, ordered, after thermomagnetic treatment, and

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E032/E414

Thermomagnetic Treatment and Ordering Processes. IV. A Study of the Effect of Thermomagnetic Treatment on the Crystal Lattice Parameter in the Case of Ordering Soft Magnetic Alloys

after annealing in the absence of the field. The disordered specimens were obtained by quenching from 700° and the ordered by 100-hour annealing at 450°. Thermomagnetic treatment consisted in the cooling of the specimens from 700 to 300° in a field of 200 oersted. The lattice parameter was determined by X-ray diffraction methods. The results obtained are summarized in a table on p 469 for 78-permalloy and perminvar specimens after the following heat treatments: quenching from 700°C (disordered), annealing at 450°C for 100 hours (ordered), cooling from 700°C at the rate of 200°C/hr in a magnetic field, cooling from 700°C at the rate of 200°C/hr with the field on. The following values are given: H_c, Oe (2nd and 5th columns); $\lambda_s \cdot 10^6$ (3rd and 6th columns) and the lattice parameter at 20°C in Å (4th and 7th columns). As can be seen from this table, thermomagnetic treatment has very little effect on the lattice parameter. This indicates that the structural

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S/126/60/009/03/028/033
E032/E414

Thermomagnetic Treatment and Ordering Processes. IV. A Study of the Effect of Thermomagnetic Treatment on the Crystal Lattice Parameter in the Case of Ordering Soft Magnetic Alloys

changes which take place on annealing in a field, appear to confirm the hypothesis that only a small proportion of atoms take part in the setting up of the single axis magnetism which is produced as a result of thermomagnetic treatment. The usual ordering process does not play an important part in the mechanism of thermomagnetic treatment. There are 1 table and 4 references 3 of which are Soviet and 1 English.

ASSOCIATION: Institut fiziki metallov AN SSSR (Institute of Physics of Metals AS USSR)

SUBMITTED: July 15, 1959

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24 2200

AUTHORS: Shtol'ts, Ye. V., Glazer, A. A., and Shur, Ya. S.

TITLE: Variation of the process of magnetic reversal when the dimensions of ferromagnetic particles are reduced

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya, v. 25, no. 12, 1961, 1445 - 1448

TEXT: That the coercive force of ferromagnetic powders increases with decreasing grain size is already known, but the nature of this effect remains unknown. In this study magnetic reversal was studied on MnBi powder as it has high anisotropy, which permits visual observation of magnetic reversal even in single-domain particles. Since MnBi is magnetically uniaxial, pseudo-monocrystalline specimens could be produced with the following particle sizes (coercive forces): 100·20μ(200 oe) 70.20μ(600 oe), 16·3μ(2,900 oe) and 4·4μ(12,500 oe). For these four types photographs were made of powder deposits in various states of magnetization at fields of up to 21,700 oe. The relative residual magnetization was determined for all size groups: 0.21, 0.54, 0.73 and 0.96 was found. The magnetic reversal

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Variation of the process of...

nucleation process was studied carefully. As there is considerable diffi-
culty in nucleation no further increase in field strength is required for
growth of nuclei. This explains the irregular rearrangement of the domain
structure. The increase in coercive force is attributed to the difficulty
of nucleation. There are 5 figures, 1 table, and 7 references: 6 Soviet
and 1 non-Soviet. The reference to the English-language publication reads
as follows: H. Amar, J. Aprl. Phys. 29, 542, 1958.

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"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7

S/126/62/014/004/006/017
E039/E435

AUTHORS: Shur, Ya.S., Glazer, A.A., Shtol'ts, Ye.V.

TITLE: On the nature of the temperature instability of the residual induction in powdered MnBi alloy permanent magnets

PERIODICAL: Fizika metallov i metallovedeniy, v.14, no.4, 1962, 523-528

TEXT: The temperature dependence of the domain structure of small particles of MnBi alloy with residual magnetization is studied by means of the Kerr effect over the range ± 200°C. Three particle sizes are investigated (samples 1, 2 and 3 of 6, 20 and 30 μ respectively), the coarse particles having a multidomain structure while the finer particles are single domain at room temperature. Critical temperatures are found for the transition from single to multidomain structure, which are lower for the smaller particles. The temperature dependence of the relative residual magnetization I_r/I_s (I_r is the residual magnetization and I_s the saturated magnetization) is also determined. At 20°C the values of I_r/I_s for samples 1,2 and 3

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were 0.95, 0.91 and 0.78 respectively. On cooling to -42°C the value of I_r/I_s for sample 3 decreased to 0.15 and for sample 2 to 0.55 while the value for sample 1 remained unchanged. Further reduction in temperature led to a decrease in I_r/I_s for sample 1 also. It is shown that there is an irreversible decrease in the residual induction on cooling due to the transition from multi to single domain type of structure. In order to prevent this effect occurring in magnets for technical applications it is essential to use very small particle sizes. There are 4 figures.

ASSOCIATION: Institut fiziki metallov AN SSSR
(Institute of Physics of Metals AS USSR)

SUBMITTED: May 6, 1962

APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7"

"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7

S/049/62/026/002/017/032
B104/B104

AUTHORS: Startseva, I. Ye., Glazer, A. A., and Shur, Ya. S.

TITLE: Temperature dependence of domain structure in ferrosilicon crystals

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya, v. 26, no. 2, 1962, 264-266

TEXT: Earlier studies of the domain structure in ferrosilicon crystals (Ya. S. Shur, I. Ye. Startseva, Zh. eksperim. i teor. fiz., 42, 966 (1962)) have revealed a temperature hysteresis of domain structure. This fact may possibly be the cause of the departure of the calculated from the measured temperature dependence of domain structure. It was investigated as to whether experimental and theoretical data will agree better when this hysteresis is excluded. This may be accomplished by allowing the specimen to attain the state of equilibrium at every temperature. The domain structure of ferrosilicon with 3.5 % Si was examined by the magneto-optical Kerr effect. Annular specimens (outer diameter 40 mm, inner diameter 28 mm, 0.35 mm thick) were cut out from coarsely crystalline

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Temperature dependence of

S/048/62/026/008/017/022
B106/B104

textured ferrosilicon. After polishing the specimens were vacuum tempered at 1200°C, and subsequently their surface was slightly oxidized in order to increase the angle of rotation of the plane of polarization. The (011) face was near the surface in most of the crystallites. Temperature dependence of the domain structure was studied in the range of 20-600°C. At every temperature the specimens were carefully demagnetized by alternating magnetic field with its amplitude monotonically decreasing to zero. This procedure was to eliminate the temperature hysteresis of domain structure. The studies led to the following conclusions: (1) The domain width is strongly temperature dependent when temperature hysteresis is eliminated by demagnetization at every temperature. (2) The temperature dependence of the domain width observed in equilibrium was qualitatively with the calculated data. Strictly quantitative comparison of experimental and theoretical data was not possible as it is not known how the magnetic flux is closed at the crystal edges. (3) Various authors found in the study of different ferromagnetics great discrepancies between the experimental and theoretical temperature dependences of the domain widths. These discrepancies are obviously due to the fact that the thermal domain structures which exist in metastable states were [illegible] with the

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Temperature dependence of

S/048/62/026/002/017/019
B106/B104

calculated equilibrium structures. There are 3 figures and 9 references: 5 Soviet and 4 non-Soviet. The three most recent references to English-language publications read as follows: Andrä W., Ann. phys. 17, 78 (1956); Fowler C., Fryer E., Phys. Rev. 94, 52 (1954); Tatsumoto E., Okamoto T., J. Phys. Soc. Japan, 14, 1588 (1959).

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"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7

S/048/62/026/002/0[illegible]
B106/B104

AUTHORS: Glazer, A. A., Shtol'ts, Ye. V., and Shur, Ya. S.

TITLE: Temperature dependence of transition domain structure in small-size particles of MnBi alloy

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya, v. [illegible] no. 2, 1962, 266-269

TEXT: The present work was experimentally to check on earlier conceptions (Ref. [illegible]: Ya. S. Shur, Ye. V. Shtol'ts, G. S. Kandaurova, L. V. Bulatova. Fiz. metallov i metallovedeniye, 5, 234 (1957); Ye. V. Shtol'ts, A. A. Glazer, Ya. S. Shur, Izv. AN SSSR. Ser. fiz., 25, no. 12, 1449 (1961)) about the nature of magnetic transition domain structure which may occur at certain dimensions of small-size particles of MnBi alloy. The temperature dependence of domain structure of MnBi alloy particles with transition structure at room temperature was studied. At room temperature the alloy MnBi has a very high coefficient K of anisotropy (some 10^7 erg/cm^3) which is highly temperature dependent whereas the saturation magnetization I_s of the alloy is only slightly dependent on temperature. K drops to one

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Temperature dependence of transition

S/048/62/026/002/018/022
B106/B104

tenth its value as temperature decreases from +20 to -[illegible]°C, while I_s increases by 5 %. The boundary energy associated with the value of K can therefore be varied within a wide range by varying temperature whereas the magnetic charges remain practically unchanged. The domain structure of specimens described earlier (Ref. 1) has been studied by the polar magneto-optical Kerr effect. Remagnetization at room temperature after magnetization of the particle by a strong field (some 10^3 oe) was visually observed. The magnitude of the negative magnetic field at which sudden remagnetization occurs was determined (this field is practically equal to the coercive force). By the same magnetic field the particle was then brought to residual magnetization and cooled with liquid nitrogen. The changes in domain structure during the cooling were observed. Two different particles showed at -15 and -42°C, respectively, a sudden division into domains [illegible] turned out to be irreversible through subsequent temperature [illegible]. The amount of this new domain phase was about equal to the quantity of original domain phase in the demagnetized state at room temperature. Remagnetization at room temperature of the particle with the lower splitting temperature has been effected only by a stronger magnetic field than in those cases with the other particles. In similar experiments [illegible]

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Temperature dependence of transition

S/048/62/026/0[illegible]
B106/B104

was established that the temperature of splitting into domains [illegible] with increasing coercive force of the particle with transition [illegible]. Some particles heated to +200°C did not split into domains. The [illegible] are interpreted as follows: In the case of magnetization at [illegible] temperature by a field that is strong enough to suppress [illegible] remagnetization the particle remains in the state of residual [illegible]. Owing to the decrease of the coefficient of anisotropy, boundary [illegible] decreases on cooling and new remagnetization nuclei will form leading [illegible] transition into domain structure at a certain temperature. This [illegible] jump-like because it leads from a metastable to a stable state. The formation of remagnetization nuclei is inhibited with increasing [illegible] force. One therefore has to cool lower to achieve transition into domain structure. K does not decrease on heating to 200°C and [illegible] does not reduce the boundary energy. From these results the [illegible] that inhibition of remagnetization nucleus formation [illegible] occurrence of a transition structure. Such an inhibition may [illegible] high boundary energy densities. A. S. Yermolenko is mentioned. There are 2 figures and 5 references: 2 Soviet and 3 non-Soviet. The [illegible] to the English-language publication reads as follows: Roberts [illegible] Bean C. P., Phys. Rev., 96, 1494 (1954).

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APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7"

"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7

SHTOL'TS, Ye.V.; GLAZER, A.A.; SHUR, Ya.S.

Change in the process of magnetic reversal when reducing the dimensions of the ferromagnetic particles. Izv. AN SSSR. Ser. fiz. 25 no.12:1445-1448 D '61. (MIRA 14:12)
(Ferromagnetism)

APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7"

"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7

SHUR, Ya. S.; GLAZER, A. A.

Temperature dependence of domain structure in magnetouniaxial ferromagnetic materials. Fiz. met. i metalloved. 14 no.4: 632-633 O '62. (MIRA 15:10)

1. Institut fiziki metallov AN SSSR.

(Domain structure)

APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7"

"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7

ACCESSION NR: AP4023406 S/0048/64/028/003/0553/0558

AUTHOR: Shur,Ya.S.; Glazer,A.A.; Dragoshanskiy,Yu.N.; Zaykova,V.A.; Kandaurova,G.S.

TITLE: Regarding departures from homogeneity of magnetization within ferromagnetic domains /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, 553-558

TOPIC TAGS: ferromagnetic domains, ferromagnetic domain inhomogeneity, magnetization reversal nuclei

ABSTRACT: This paper is a short summary of investigations, conducted in the Ferromagnetic Laboratory of the Institute of Metal Physics of the Academy of Sciences, SSSR, concerning departures from homogeneity of magnetization within ferromagnetic domains. The early stages of the formation of magnetization reversal nuclei on the basal plane surface of a magnetoplumbite crystal, and their development into domains was observed by means of powder patterns. Motion pictures of this process were made, and several frames are reproduced. As the magnetizing field (perpendicular to the crystal surface) was gradually reduced from saturating values, the powder pattern,

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ACCESSION NR: AP4023406

initially featureless, first showed large (~0.1 mm) circular bright spots. These decreased in size, increased in number, became irregular in shape, and finally some of them could be seen to grow into twisting domains of opposite magnetization. The initial large spots revealed by the powder pattern are ascribed to "spin vortices", regions in which the spins are inclined to the surface in a circular pattern. These arise because they provide partial flux closure within the crystal, thus reducing the surface energy. As the magnetizing field decreases, the spin inclinations increase, and the disturbance penetrates more deeply into the crystal. Finally spin reversal occurs in the center of the vortex, and a reverse magnetization nucleus is formed. These nuclei grow into spike shaped domains. If this interpretation of the observations is correct, the intersections of the wall of such a spike domain with a plane parallel to the magnetic axis should have opposite polarities; this was observed to be the case in cobalt. The domains in Co and in MnBi alloy were observed to increase in size with increasing temperature, although the saturation magnetization did not change significantly over the temperature range concerned, the crystal anisotropy decreased markedly, and no domains of closure could be found. This behavior is ascribed to spin disorientation at the higher temperatures, resulting in internal flux closure and decreased surface energy. This interpretation is supported

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ACCESSION NR: AP4023406

by the fact that the contrast of the domains as observed with the longitudinal Kerr effect, as well as that of the spots on the basal plane as observed with the polar Kerr effect, decreased with increasing temperature. This increase in spin disorientation with increasing temperature could be due to increasing influence of crystal imperfections as the crystal anisotropy decreases. The magnetostriction of silicon iron in the [100] direction, which should vanish in an ideal crystal, was found to depend strongly on the annealing process to which the crystal had been subjected. The less thoroughly annealed specimens showed greater magnetostriction and less perfect domain structure. This indicates departure from uniform magnetization within the domains due to crystal imperfections. It is concluded that investigation of the departure from homogeneity of the magnetization within the domains is prerequisite to a deep understanding of various properties of ferromagnetic materials. Orig.art.has: 4 figures.

ASSOCIATION: Institut fiziki metallov Akademii nauk SSSR (Institute of Physics of Metals, Academy of Sciences, SSSR)

SUBMITTED: 00 DATE ACQ: 10Apr64 ENCL: 00

SUB CODE: PH NR REF SOV: 002 OTHER: 000

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L 50984-65

ACCESSION NR: AP5011464

temperatures on some of the magnetic and electric properties of Permalloy films is discussed (after annealing at 400° 79 Permalloy films become isotropic). It is con-

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[illegible] SOV/[illegible]

Author: [illegible]; [illegible]; [illegible]

Org: [illegible] Physics, Academy of Sciences, USSR (Institut fiziki metallov [illegible])

Title: Two-layer films of manganese and Permalloy with unidirectional anisotropy (characteristics of the domain structure) /Report, All-Union Conference on the Physics of ferro- and antiferromagnetism held 2-7 July 1966 in Sverdlovsk/

Source: AN SSSR. Izvestiya. Seriya fizicheskaya, v. 30, no. 6, 1966, 1059-1061

Topic Tags: ferromagnetism, antiferromagnetism, ferromagnetic film, permalloy, manganese, magnetic domain structure

ABSTRACT: In order to investigate the influence on domain structure of the exchange interaction between ferromagnetic and antiferromagnetic regions that is responsible for unidirectional anisotropy, the authors have recorded powder patterns of two-layer films of Permalloy and manganese, which, according to O. Massenet and R. Montmory (C.R.Acad. Sci., 255, No.6, 1752 (1962)), can be made to exhibit unidirectional anisotropy at room temperature. The films of manganese and 82 Permalloy were successively vacuum deposited at 5×10^{-5} mm Hg to a thickness of 500 Å each onto a glass substrate held at 200° C in a magnetic field of 70 Oe. After deposition the films exhibited uniaxial magnetic anisotropy and a domain structure of the usual type, and magne-

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L 08746-67

ACC NR: AP6029133

[illegible] switching took place by nucleation followed by domain wall displacement. The domain walls contained crossties, i.e., they consisted of portions with right- and [illegible] rotation of the spins in the plane of the film. Unidirectional anisotropy was induced in the films by annealing them for 1.5 hour at 350°, which resulted in the formation of an antiferromagnetic compound at the boundary between the manganese and the permalloy. The domain walls present in the film during the anneal were clamped, i.e., they could not be moved or destroyed by demagnetization in a decreasing alternating field. Switching took place by magnetization rotation in different directions, as was evinced by the appearance within the domains of walls perpendicular to the applied field. At saturation the positions of the original walls were marked by clusters of powder, and the walls reappeared in their original locations and with their original fine structure when the field was removed. The annealed films required much stronger fields for magnetization switching than do the unannealed ones. The clamping of the domain walls in the annealed films is explained as a result of the exchange interaction between the ferromagnetic and antiferromagnetic layers and the inability of moderately strong external fields to alter direction of the antiferromagnetism in the antiferromagnetic layers. Orig. art. has: 3 figures.

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

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"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7

ACC NR: AP6033565 SOURCE CODE: UR/0181/66/008/008/2382/2391

AUTHOR: Glazer, A. A.; Potapov, A. P.; Tagirov, R. I.; Shur, Ya. S.

ORG: Institute of Physics of Metals, AN SSSR, Sverdlovsk (Institut fiziki metallov AN SSSR)

TITLE: Exchange anisotropy in thin magnetic films

SOURCE: Fizika tverdogo tela, v. 8, no. 8, 1966, 2382-2391

TOPIC TAGS: manganese, permalloy, magnetic anisotropy, ferromagnetic film, antiferromagnetic material, magnetic hysteresis, hysteresis loop, metal diffusion

ABSTRACT: The purpose of the investigation was to study systematically [illegible] properties of two-layer manganese-permalloy films and especially to [illegible] the regularities that result from exchange interaction between the ferromagnetic and antiferromagnetic regions in such materials. The samples were produced in the form of round [illegible] mm diam. by successive sputtering of layers of [illegible] Mn-permalloy [illegible] from [illegible] in a vacuum of [illegible] mm Hg. The substrate was in a magnetic field of [illegible] and temperature [illegible]. The layer thickness was [illegible] A. The film characteristics measured were the [illegible] loops in different directions in the plane of the film, the torque curves, [illegible] domain structure. The measurements were made after annealing at [illegible] and cooling in the magnetic field. The films so treated exhibit a domain structure and all the [illegible] characteristic of substances with exchange (unidirectional) anisotropy, [illegible] by a shift in

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ACC NR: AP6033565

the hysteresis loop, proportionality of the torque to the sine of the angle, and leads to rotational hysteresis in strong fields. This anisotropy is apparently due to exchange interaction between the permalloy layer with the antiferromagnetic regions produced by mutual diffusion of the iron, nickel, and manganese. The angular dependence of the magnetic properties can be qualitatively described in terms of the rotation theory, extended to the case of a uniaxial film. The rotational hysteresis loss is due to inhomogeneity of the exchange anisotropy. The authors thank L. T. Khrabrov for processing the samples in pulsed magnetic fields and A. I. Mitsek for useful discussions. Orig. art. has: 7 figures and 6 formulas.

SUB CODE: 20/ SUBM DATE: 04Apr66/ ORIG REF: 004/ OTH REF: 004

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APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7"

"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7

GLAZER, L.R. [Hlazer, L.R.]

Use of a cross suture on the cervix uteri in atonic hemorrhages during the early postpartal period and in abortion. Fed., akush. i gin. 20 no.2:55-58. (MIRA 13:1)

1. Rodil'nyy otdel (zav. - L.R. Glazer) Melitopol'skogo rodil'nogo doma (glavnyy vrach - L.V. Borovskikh, nauchnyy rukovoditel' - prof. V.O. Lositskaya).
(UTERUS--SURGERY) (PUERPERIUM) (ABORTION)

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"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7

GLAZER, R I
CA

4

Solid dipping electrode for polarographic determination of silver. Yu. S. Lyalikov and R. I. Glazer. *Zavodskaya Lab.* 15, 969-11(1949).—The electrode, which was described earlier (C.A. 43, 8946e) is applicable to Ag analysis but cannot be made with Hg electrode. Best KNO_3 concn. is 0.5-0.7 *N* for the basis current; however, Na_2SO_3 is the only complex-forming salt yielding a sharp potential wave, which is const. for *N* to 5 *N* sulfite, while lower concns. give a sharp min. at 0.5 *N*. Best gas flow rate is 1 bubble/sec. Since the wave height depends on electrode area, all work was done with 1.9 sq. cm. Pt anode with 3 mm. immersion of cathode; the wave height temp. coeff. (beyond 25°) is 0.0105. The electrode polarization, which may disturb the wave potential, can be removed by 5 min. short circuit or washing in HNO_3. Typical curves in KNO_3-HNO_3 and KNO_3-Na_2SO_3 solns. are given, in which known Ag solns. (0.37-7.2 milliequivs.) are analyzed within 5-6%. G. M. Kosolapoff

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"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7

GLAZER, G.A.

A study of some haemodynamic parameters in essential hypertension, Cor vasa 5 no.3 165-176 '63.

1. Institute of Internal Medicine, Academy of Medical Sciences, Moscow.
(HYPERTENSION) (BLOOD CIRCULATION)
(BLOOD VOLUME) (HEMATOCRIT)
(HEART FUNCTION TESTS) (BLOOD VESSELS)
(PHYSIOLOGY)

APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7"

"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7

GLAZER, G.A.

Haemodynamic changes in symptomatic renal hypertension. Cor Vasa 6 no.4:264-273 '64.

1. Institute of Internal Medicine, Academy of Medical Science, Moscow, USSR.

APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7"

"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7

GLAZER, I.S.; BERLIN, S.I.; RAPAVA, V.B.

Improvement of sanitary educational work and new organizational forms in the control of veneral diseases. Vest. derm. i ven. 36 no.10:73-75 O'62 (MIRA 16:11)

APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7"

"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7

ACC NR: AP6032543 (A) SOURCE CODE: UR/0413/66/000/017/0167/0167

INVENTOR: Aliyev, V. S.; Al'tman, N. B.; Yelenovich, A. S.; Glazer, M. P.

ORG: none

TITLE: Method of reinforcing sand dunes. Class 84, No. 185765

SOURCE: Izbreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 17, 1966, 167

TOPIC TAGS: road, road construction, lime, resin, sand, sand dune, sand binder

ABSTRACT: An Author Certificate has been issued for a method of reinforcing sand dunes in road construction in deserts by means of binding them at the site. To increase the cohesiveness of sand particles, a milled unslaked lime is introduced into them, followed by an indenealkylated resin, taken appropriately in quantities of 3 and 6—10% of the weight of the sand. [Translation]

SUB CODE: 11/ SUBM DATE: 26Feb64/

Card 1/1 UDC: 624.138.4

APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7"

"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7

VIKHREV, Ivan Dmitriyevich, kand. tekhn. nauk; [illegible], [illegible], inzh., nauchn. red.; NAZARETSEVA, L.I., red.; [illegible], D.Ye., tekhn. red.

[Building steel plants] Stroitel'stvo zavodov chernoi metallurgii. Moskva, Gosstroiizdat, 1963. [illegible] p. (MIRA 17:3)

APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7"

"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7

GOVOROVA, V.M.; GLAZER, R.I.

Use of fuchsin sulfurous acid as a reagent for detection of ammonia. Trudy Kish.sel'khoz.inst. 26:135-136 '62. (MIRA 16:5)
(Ammonia) (Schiff reaction)

APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7"

"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7

AUTHOR: Glazer, S.I., Engineer SOV/99-58-8-12/13

TITLE: Calculation of Reinforced Concrete Beams of Rectangular Cross-section Subjected to Oblique Bending (Raschet zhelezobetonnykh balok pryamougol nogo secheniya pri kosom izgibe)

PERIODICAL: Beton i Zhelezobeton, 1958, No 8, pp 316 - 320 (USSR)

ABSTRACT: The author considers a beam subjected to the simultaneous action of two bending moments M_x; M_y. It is assumed that the section under consideration is reinforced along two adjacent sides. It is further assumed that in the limiting state, the stresses over the whole area of the compressed zone of the concrete are constant. Criteria are established whereby the form of the compressed zone can be determined in advance, and also to determine how the distance between the centre of gravity of the compressed zone and the geometrical centre of the section is to be calculated. Two examples are given in which it is required to find the area of

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SOV/99-58-8-12/13

Calculation of Reinforced Concrete Beams of Rectangular Cross-section Subjected to Oblique Bending

reinforcement; in the first example, the compressed zone is triangular and in the second it is trapezoidal. There are 7 figures and 1 table.

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"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7

GLAZER, S.I. (Odessa)

Determining the stress-strain diagram along the base of foundations during the action of moments in two directions taking breaks into account. Osn. fund. i mekh. grun. 6 no.4:24-27 '64.
(MIRA 17:12)

APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7"

"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7

GLAZER, TADEUSZ

Glazer, Tadeusz. Chemiczne srodki gasnicze i gasnice. Szczecin, Pozarnicza Spoldzielnia Wydawnicza, 1949. 148 p. (Chemical extinguishing materials and extinguishers. Illus., bibl., tables)

SO: East European LC Vol. 2, No. 12, Dec. 1953

APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7"

"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7

GRAZEK, J.

"First Aid in Case of Poisoning." P. 113.
(Chemia, Vol. 5, No. 4, Apr. 1956, Katowice, Poland.)

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 5,
No. 12, Dec. 1956, Uncl.

APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7"

"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7

GLAZER, TADEUSZ

Technology

Przyczyny pozarow i wybuchow. Arkady, 1958. 143 p. (Causes of fires and explosions.)

Monthly List of East European Acessions (EEAI), LC, Vol. 8, No. 3, March 1959
Unclass.

APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7"

"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7

ZEBRACKI, Tadeusz

SURNAME, Given Names

Country: Poland

Academic Degrees: [none given]

Affiliation: Obstetrical Clinic (Klinika Poloznicza), Veterinary Division (Wydział Weterynarii), College of Agriculture (WSR--Wyższa Szkoła Rolnicza), Lublin; Director: Acting Prof. Antoni ZEBRACKI, Dr.

~~Source:~~

Source: Warsaw, Medycyna Weterynaryjna, Vol XVII, No 7, July 1961, pp 406-407.

~~Data:~~

Data: "Protective Obstetric Paste "Biogel" -- Drwalev."

GPO 981643

APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7"

"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7

GLAZER, Tadeusz (Lublin)

The protective obstetrical paste "Biogel". - Drwalew Zeszyty problemowe post nauk roln no.31:211-212 '61.

APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7"

"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7

POLAND

KRZYZANOWSKI, Jan and GLAZER, Tadeusz, Obstetrical Clinic (Klinika Polozniczа), Veterinary Division (Wydział weterynaryjny), WSR [Wyższa Szkoła Rolnicza, Higher School of Agriculture] in Lublin ("Kurator": Docent, Dr. Stanisław TARKIEWICZ)

"Activity of the Obstetrical Clinic of the Veterinary Division at the Higher School of Agriculture in Lublin during 1951-1960 in the Light of Statistical Data."

Warsaw-Lublin, Medycyna Weterynaryjna, Vol 18, No 12, Dec 62, pp 715-717.

Abstract: Statistical report containing species and quantities of animals treated; the types, incidence, and percentage of cure of the animal diseases; and frequency of veterinary help by years and months of the year. There are no references.

1/1

APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7"

"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7

SP
Sect. 11

Cathode Rays - Electrons
Rays

537.533.72

5828. **Caustic surfaces of electron lenses.** V. GLAZER [W. GLASER] AND G. GRYUSSE [GRUSSE]. *Zh. Tekh. Fiz.*, 21, 1412-26 (*No.* 11, 1951) *In Russian.*

Finsterwalder's method (1892) of determining the shape and position of the caustic surfaces [surfaces of maximum intensity] due to the combined Seidel aberrations in the imaging of an off axis point is applied to e.s. and magnetic lenses. It is shown how the formulae must be modified when there is no stop. Numerical values of parameters and photographs of models of the caustic surfaces are given for one set of typical electron microscope objective data, using the "bell" field.

J. C. B. JENNISON

APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7"

"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7

S.A.
Div II

Cathode Rays + Positive Rays

537.513.72

5829. A wave mechanical determination of the intensity relations in the image space of electron lenses. I. Determination of the electron intensity for given geometrical-optical imagery. V. Glaser [W. Glaser] and G. Grivcin [Grichin.] *Zh. Tekh. Fiz.*, **21**, 1427–43 (No. 11, 1951) *In Russian.*

By an extension of the WKB method, Schrödinger's equation is shown to lead, for a slowly varying refractive index, to corrections of the amplitude and phase as compared with the usual solution for locally constant refractive index; the conditions of validity of these corrections are shown to hold in existing electron microscope lenses. The corrected solutions are to be applied to rotationally symmetric systems having Seidel aberrations and also to systems with imperfect rotational symmetry. J. C. E. Jennings

APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7"

"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7

GLAZER, V. Physics Lithuanian

Vilnius, "Possible mirrors of electron [illegible]," [illegible], [illegible].

APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7"

"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7

GLAZER, V. Physics Irradiation

Abst. 1. Izvest., "A wave mechanical determination of the intensity relations in the image effect of electron lenses. I. Determination of the electron intensity for given phenomenologic field image," Izv. Ser., 1 ...

APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7"

"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7

GLINER, V. Physics Yugoslavia

"The [illegible] of a 'wave packet' in an electron beam," [illegible], [illegible] .

APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7"

"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7

GLAMER, V. Physics Vegetation

"Image formation in the electron microscope," Bull. Acad., [illegible].

APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7"

"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7

GLAZER, V. Physics Regulation

Alex H. Glazer, "The controlled combustion of an electrical spiral [illegible] without a burner," Inst. Abs., [illegible].

APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7"

"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7

GLAZER, V. Physics Navigation

Vitin P. Sa. Isko, "Electron optical image transition in the case of very [illegible]," Prib. Abst., 1, [illegible].

APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7"

"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7

GLAZER, V. M., FILIPPOV, V. M., STOLETOV, V. N., SHESTAKOV, S. V.,

"The Biochemistry of Dissociation of Bacillus brevis GB."

report submitted for the 11th Intl. Congress of Genetics, The Hague, Netherlands, 2-10 Sep 63

APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7"

"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7

APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7"

"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7

STOLETOV, V.N.; GLAZER, V.M.; SHESTAKOV, S.V.

Content of acid soluble phosphorus compounds in different variants of Bacillus brevis ver. G.-B. Mikrobiologiia 34 no.4:584-589 Jl-Ag '65. (MIRA 18:10)

1. Biologo-pochvennyy fakul'tet Moskovskogo gosudarstvennogo universiteta imeni M.V.Lomonosova.

APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7"

"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7

SOURCE : Poland

CATEGORY :

ABS. JOUR. : [illegible]

AUTHOR : [illegible]

TITLE : [illegible]

[illegible]

ABSTRACT : [illegible]

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APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7"

"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7

GLAZEWSKA, Zdzislawa

Peronospora humuli of hop in the light of literature.
Postepy nauk roln 11 no.3:53-71 My-Je '64.

1. Department of Special Plants, Institute of Cultivation, Fertilization and Soil Science, Pulawy.

APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7"

"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7

GLAZEWSKI, Zenon, dr inz.

Vibrations of conic coatings. Przegl mech 22 no.9:282 10 My '63.

1. Katedra Wytrzymalosci Materialow, Politechnika, Gdansk.

APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7"

"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7

GLAZEWSKI, Zenon, dr inz.

Application of vibration devices in the mechanization of unloading frozen loose materials from railway cars. Wiad hut 15 [i.e. 20] no. 2: 52-57 F '64.

APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7"

"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7

GLAZGOV, A. A., [illegible], [illegible], [illegible]

Basic Engineering work on Linear Electron Acceleration, etc.

Linear Acceleration. Published by the Moscow Engineering-Physics Institute, Moscow, 1959.

APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7"

"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7

TERYUSHNOV, Aleksandr Vasil'yevich; MAL'CHIKOV, Yu.A., redaktor; GLAZGOV, Ia.I., retsenzent; MEDVEDEVA, L.A., tekhnicheskiy redaktor

[Influence of the condition of spinning machinery yarn breakage and methods of reaching high production] Vliianie sostoianiia priadil'nykh mashin na obryvnost' i mery bor'by za ikh vysokuiu proizvoditel'nost'. Moskva, Gos.nauchno-tekhn.izd-vo Ministerstva promyshlennykh tovarov shirokogo potrebleniia SSSR, 1955. 138 p. (MLRA 9:1)
(Spinning machinery)

APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7"

"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7

GLAZIYAN, B.G.

Isolation of insulin from the pancreas of small cattle and horses. R. K. Aliev, E. E. Osina, and B. G. Glaziyan. *Doklady Akad. Nauk Azerbaidzhan. S.S.R.* 14, 37-60 (1958)(in Russian).—The pancreas of horses or small farm animals (sheep, goats) can serve as a productive source of insulin by extn. with acidified EtOH, defatting, and salting out with $(NH_4)_2SO_4$, followed by NaCl. Details of the procedures are given.

G. M. Kosolapoff

APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7"

"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7

USSR/Farm [illegible] - Honey Bees.

Abs Jour : [illegible] - Biol., No. [illegible] 57,457

Author : [illegible], N.N.
Inst : [illegible]
Title : [illegible] Bee [illegible] Apiary.

Orig Pub : [illegible], 1958, No. [illegible]

Abstract : [illegible] the winter quarters [illegible] Kharkov-Belgorod [illegible] arrangement [illegible] bees. [illegible] winter [illegible] prove [illegible] are used to [illegible] 37 [illegible] conditions. [illegible] temperature [illegible] 27. [illegible] 29 [illegible] .

Card 1/1

APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7"

"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7

GLAZKO, N.A.

RAPOPORT, B.I.; GLAZKO, N.A.

Roentgenotherapy in polyneuritis. Vest. rent. i rad. 32 no.1:5-6 supplement '57 (MIRA 10:5)

1. Iz TSentral'noy klinicheskoy psikhonevrologicheskoy i neyrokhirurgicheskoy bol'nitsy Ministerstva putey soobshcheniya Ukrainskogo rentgeno-radiologicheskogo i onkologicheskogo instituta.

(POLYNEURITIS, ther.
radiother.)
(RADIOTHERAPY, in various dis.
polyneuritis)

APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7"

"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7

GLAZKO, N. S., Candidate Biol Sci (diss) -- "Histomorphological changes in the cornea with various methods of conserving it". Ashkhabad, 1959. 10 pp (Turkmen Med Inst im I. V. Stalin), 200 copies (KL, No 24, 1959, 113)

APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7"

"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7

GLAZKO, S.G.

Builders for the transportation industry in foreign co[illegible]. Transp. stroi. 14 no.1:54-56 Ja '64. (MIRA 17:8)

1. Nachal'nik Upravleniya vneshnikh snoshenii Gosudarstvennogo proizvodstvennogo komiteta po transportnomu stroitel'stvu SSSR.

APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7"

"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7

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"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7

SVIRSHCHEVSKIY, Bronislav Stanislavovich; ABRIKOV, M.S., red.; ANTONOVSKIY, B.N., red.; BRIDNYAKOVA, A.V., red.; GLAZKO, V.G., red.; GOROBETS, P.Z., red.; DOKUCHAYEVA, A.P., red.; YELENEV, A.V., red.; KISELEV, I.I., red.; KOGANOV, A.B., red.; KONDRAT'YEV, M.A., red.; KONYUSHKO, V.A., red.; KURGANOV, A.I., red.; PUTYATIN, M.D., red.; PERE, N.E., red.; LETNEV, B.Ya., red.; MAKHOVA, N.N., tekhn. red.; GOR'KOVA, Z.D., tekhn. red.

[Utilization of tractors and machinery] Ekspluatatsiia mashinno-traktornogo parka. Izd.3., perer. Moskva, Gos. izd-vo sel'khoz. lit-ry, 1958. 660 p. (MIRA 11:10)

(Agricultural machinery)

APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7"

"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7

GLAZKO, V.G.; TSVETKOV, V.P.

Determination of the content of magnetite in mixtures. Zav. lab. 29 no.10:1204 '63. (MIRA 16:12)

1. Kommunarskiy gorno-metallurgicheskiy institut.

APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7"

"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7

[illegible]

[illegible]

1. [illegible]

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"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7

GLAZKOV, A.; IVANNIKOV, N.

Simple preparation of die-casting molds. Mashinostroitel' no.11:32 N '62. (MIRA 15:12)
(Die casting--Equipment and supplies)

APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7"

"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7

VAL'DNER, O.A.; GLAZKOV, A.A.; FINOGENOV, A.I.

A 5 Mev. linear electron accelerator (model U-12). Prib. i tekh. eksp. 8 no.3:29-32 My-Je '63. (MIRA 16:9)
(Particle accelerators)

APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7"

"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7

GLAZKOV, A.A.; MAZITOV, I.F.; FAKHREYEV, I.A.

Investigating inflow to the pumping wells of the Arlan oil field. Nefteprom. delo no.1:13-16 '64. (MIRA 17:4)

1. Ufimskiy neftyanoy nauchno-issledovatel'skiy institut i TSekh nauchno-issledovatel'skikh i proizvodstvennykh rabot neftepromyslovogo upravleniya "Arlanneft'".

APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7"

"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7

BLAZHEVICH, V.A.; GLAZKOV, A.A.

Investigating the nature of fluid motion in a producing bed.
Nefteprom.delo no.2:3-12 '64. (MIRA 17:4)

1. Ufimskiy neftyanoy nauchno-issledovatel'skiy institut.

APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7"

"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7

PYATNOV, Ye.G.; GLAZKOV, A.A.; LOMUEV, S.P.

Dynamics of the longitudinal motion of particles in a wave guide buncher of a linear electron accelerator. Nek.vop.inzh.fiz. no.2: 65-84 '57. (MIRA 12:7)
(Particle accelerators) (Wave guides)

APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7"

"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7

APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7"

"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7

GLAZKOV, A.A.; PYATNOV, Ye.G.

Higher harmonics of the field in septate wave guides. Nek. vop.inzh.fiz. no.3:96-107 '58. (MIRA 12:5)
(Wave guides)

APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7"

"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7

SOV/142-58-5-2/23

9(2)

AUTHOR: Glazkov, A.A.

TITLE: Amplitude of Primary Wave TM in a Diaphragm Wave Guide

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, radiotekhnika, 1958, Nr 5, pp 533-537 (USSR)

ABSTRACT: The article gives a summary of literature concerning the field amplitude in linear accelerators for electrons, depending on the geometric parameters and the operating conditions of the wave guide. It is shown, that the registration of superior waves leads to decreasing amplitudes of the primary waves. To calculate the amplitude, the formula of Walkinshaw is given (Ref.5) (equation (1)). To introduce the relative partial capacity of harmonic the equivalent of Walkinshaw 0.98 is used. From the accelerators of Miller (Ref.5) Stanford, the accelerator type III (Ref.6) and the accelerator MIFI values 0.6 0.8 were found. Now, formula (1) is corrected and the factor is brought in (9). Fig. 1 shows the field distribution according to Walkinshaw and Maier-Slater. Mentioned is Brillouin (Ref.2). The article is recommended by the Kafedra elektrofizicheskikh ustanovok Moskovskogo inzhenerno-fizicheskogo

Card 1/2

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"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7

SOV/142-58-5-9/23

Amplitude of Primary Wave TM in a Diaphragm Wave Guide

institute (Chair of Electro-physical Installations at the Moscow Engineering and Physics Institute). There are 3 graphs, 16 equations and 7 references, 1 of which is Soviet and 6 English.

SUBMITTED: Febrary 1, 1958 (initially)
March 14, 1958 (after revision).

Card 2/2

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"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7

Glazk... A.A.

21(9) PHASE I BOOK EXPLOITATION SOV/2003

Moscow. Inzhenerno-fizicheskiy institut

Lineynyye uskoriteli; sbornik statey (Linear Accelerators; Collection of Articles) Moscow, 1959. 94 p. 1,000 copies printed.

Ed.: G. A. Tyagunov, Doctor of Technical Sciences, Professor; Tech. Ed.: R. A. Negrimovskaya.

PURPOSE: This collection of articles may be useful to engineers engaged in the development, production and application of linear accelerators.

COVERAGE: The authors discuss the theory and operation of linear accelerators developed by MIFI. They describe methods of measuring variable phase velocity in a waveguide of a linear electron accelerator and discuss ways of determining the diameter of a waveguide. A method of improving the energy spectrum at the output of an accelerator is also discussed. No personalities are mentioned. References appear at the end of each article.

Card 1/6

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"APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7

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Val'dner, O. A. Linear Electron Accelerators of MIFI 7

The author presents a brief review of problems in the development of linear electron accelerators. He discusses the operation of three different models of accelerators developed by MIFI and presents their characteristics. There are 11 references: 9 Soviet and 2 English.

Shal'nov, A. V., Ye. G. Pyatnov and A. A. Glazkov. Fundamentals of the Design of a Linear Traveling-wave Electron Accelerator 16

The authors discuss general methods of designing a linear electron accelerator. They discuss principles of obtaining the phase velocity and magnitude of the field of the accelerating wave, which are necessary for achieving under given power supply conditions the desired characteristics of the accelerator output beam. Examples showing the variation of the phase velocity and the magnitude of the accelerating wave are also presented. The authors also describe methods and procedure in designing waveguides for obtaining the necessary variation of the phase velocity and the magnitude of the accelerating wave.

APPROVED FOR RELEASE: 09/24/2001 CIA-RDP86-00513R000500010017-7"