84122

9.2571

S/070/60/005/005/008/017
E132/E360

AUTHORS: Belov, K.P., Belov, V.F. and Timofeyeva, V.A.

TITLE: Ferromagnetic Resonance in Single Crystals of Yttrium Ferrite in the Temperature Range from Room Temperature to the Curie Point

PERIODICAL: Kristallografiya, 1960, Vol. 5, No. 5, pp. 732 - 736

TEXT: The temperature dependence of the parameters of the ferromagnetic resonance in single crystals of yttrium ferrite (garnet) from 20 to 300 °C has been measured. With increasing temperature the constant of the magnetic anisotropy (K_1) decreases but the g-factor scarcely changes. The resonant absorption line width H also decreases but grows again towards the Curie point. The effect of the different degrees of polishing on the line width was also studied. Crystals were grown by the method of Nielsen and Dearborn (J. Phys. Chem. Solids, Vol. 5, 202, 1958) in the form of tetrakis trioctahedra or of combinations of this form with the rhombic dodecahedron. These were ground into spheres of 0.8 to 1.0 mm diameter and

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E132/E360

Ferromagnetic Resonance in Single Crystals of Yttrium Ferrite in the Temperature Range from Room Temperature to the Curie Point

measurements were made at 9470 Mc/s. The spheres were oriented magnetically and mounted in a resonance chamber. With the size of sphere used, produced by air grinding, there was no correction for the size of the sphere. The surface finish, however, seriously affected the line width and the final polishing paper had a grain size of 1 μ. If the polishing powder had a grain size of 100 μ then the line width was 15 Oe but with the finest grinding this was reduced to 2.3 Oe. The Landé g-factor was found, as was expected from spectroscopic data, to be slightly different from 2 . On three specimens it was measured as 2.03, 2.02 and 2.01 in each case ± 0.003. The resonance magnetic field for the three directions [100], [110] and [111] approached each other from the values of 3450, 3347 and 3313 Oe, respectively, at 20 °C and converged to the value 3364 Oe at 250 °C.

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S/070/60/005/005/008/017
E132/E360

Ferromagnetic Resonance in Single Crystals of Yttrium in the Temperature Range from Room Temperature to the Curie Point

There are 7 figures, 2 tables and 7 references: 2 Soviet and 5 English.

ASSOCIATION: Institut kristallografii AN SSSR
(Institute of Crystallography of the AS USSR)

SUBMITTED: March 18, 1960

Card 3/3

87807

1144 S/070/60/005/006/006/009

24.2200 (1138, 1160, 1162) E021/E306

AUTHOR: Belov, V.F.

TITLE: The Influence of Excess Manganese Ions on the Anisotropy of Ferromagnetic Resonance in Single Crystals of Manganese Ferrites

PERIODICAL: Kristallografiya, 1960, Vol. 5, No. 6, pp. 912 - 916

TEXT: The investigation was carried out on spherical samples, 0.8 - 1 mm in diameter, using a water-wave cell (Ref. 4). Measurements of the ferromagnetic resonance were made at 9 470 Mc/s. The effect of Mn_3O_4 content on the resonance magnetic field is shown in Fig. 4 for the direction [100], [110] and [111]. All three directions show an increase with increase in Mn_3O_4 content. Fig. 5 shows the effect of Mn_3O_4 content on the constant of magnetic anisotropy K, and the g-factor. Both decrease

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87807
S/070/60/005/006/006/009
E021/E306

The Influence of Excess Manganese Ions on the Anisotropy of Ferromagnetic Resonance in Single Crystals of Manganese Ferrites

with increase in hausmannite content. The width of the line of resonance absorption, ΔH, also decreases with increase in Mn_3O_4 content (Fig. 7). Fig. 3 shows the relation between the resonance magnetic field and the direction in the crystal for the (110) plane, and for three single crystals containing 3.5% Mn_3O_4 (1), 18.5% Mn_3O_4 (2), and 27.5% Mn_3O_4 (3). The symmetry of the resonance field corresponds to the crystallographic symmetry. There are 7 figures and 5 references: 3 Soviet and 2 non-Soviet.

ASSOCIATION: Institut kristallografii AN SSSR
(Institute of Crystallography, AS USSR)

SUBMITTED: March 4, 1960

Card 2/2

85700

S/056/60/038/006/043/049/XX
B006/B070

24.7900 (1055,1144,1160)

AUTHORS: Belov, K. P., Belov, V. F., Popova, A. A.

TITLE: Single Crystals of Magnesium Manganese Ferrites With a Narrow Ferromagnetic Resonance Absorption Curve

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1960, Vol. 38, No. 6, pp. 1908 - 1910

TEXT: The present "Letter to the Editor" gives some experimental results obtained from some spinel-type ferrites with a narrow resonance absorption line. The line width ΔH was measured for different magnesium manganese ferrites with different oxide ratios of Mn and Mg. The single crystals studied were bred by the method of Verneuille. The specimens were spherical in shape with a diameter of 0.8-1 mm; their surfaces were polished. The measurements were made at a frequency of 9470 Mc/sec. The results of measurement, namely, the values of ΔH, of the saturation magnetization $4\pi I_s$, and of resistivity ϱ are shown in Table 1. Fig.1 shows the anisotropy of the line width in the (110) plane of a specimen having the composition last mentioned in the Table at room temperature (continuous

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85700

Single Crystals of Magnesium Manganese Ferrites With a Narrow Ferromagnetic Resonance Absorption Curve

S/056/60/038/006/043/049/XX
B006/B070

curve). The anisotropy of ΔH at room temperature had an amplitude of (3.5 ± 0.5)oe. The broken line shows the anisotropy of the resonance field H_p. The anisotropy character of ΔH is in agreement with the phenomenological calculations of G. V. Skrotskiy and L. V. Kurbatov (Ref.5). Fig.2 shows ΔH, $4\pi I_s$, and the constant of magnetic anisotropy K_1 as functions of T (in the temperature range 0 - 300°C) for a specimen having the composition last mentioned in the Table. There are 2 figures, 1 table, and 5 references: 3 Soviet and 2 US.

ASSOCIATION: Institut kristallografii Akademii nauk SSSR (Institute of Crystallography of the Academy of Sciences USSR)

SUBMITTED: March 18, 1960

Card 2/4

85700

S/056/60/038/006/043/049/XX
B006/B070

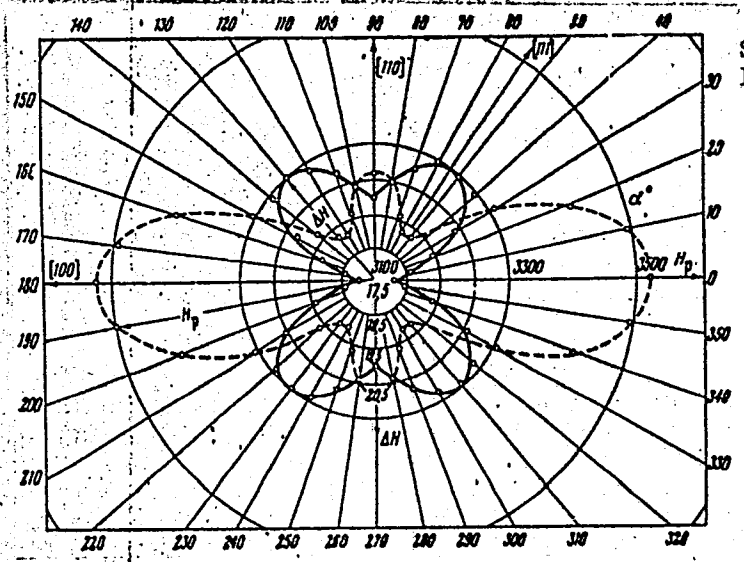

Fig.1

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S/056/60/038/006/043/049/XX
B006/B070

Composition in wt% Состав в весовых процентах (по расчету)	ΔH, Oe	$4\pi I_s$, G	ρ, Ω·см
9,4 MgO; 16,5 MnO; 74,1 Fe_2O_3	18	3320	800
8,4 MgO; 23,9 MnO; 67,5 Fe_2O_3	12	2950	$1,6 \cdot 10^5$
8,0 MgO; 28,3 MnO; 63,7 Fe_2O_3	16	2740	10^6
6,9 MgO; 37,3 MnO; 55,9 Fe_2O_3	18	2480	$4,6 \cdot 10^6$

TABLE

Table.

Card 4/4

BELOV, V. F., Cand. Phys-Math. Sci. (diss) "Investigation of Ferro-Magnetic Resonance in Monocrystalline Manganese and Magnesium-Manganese Ferrites," Moscow, 1961. 10 pp. (Moscow State Univ. Physics Faculty) (KL Supp 12-61, 249).

S/181/61/003/005/014/042
B101/B214

24,7900 (1055, 1147, 1144)

AUTHORS: Belov, K. P. and Belov V. F.

TITLE: The problem of the anomalous increase of the line width of ferromagnetic absorption in ferrites near the Curie point

PERIODICAL: Fizika tverdogo tela, v. 3, no. 5, 1961, 1425 - 1427

TEXT: Reference is made to the fact that there is not only an anomalous increase ΔH of the width of the ferromagnetic resonance line near the Curie point, but also an increase of the coercive force H_c in polycrystals as well as in single crystals. It is concluded that both the phenomena are caused by the inhomogeneity of the ferrite structure rather than by the heat fluctuations of the simultaneous magnetization. Experiments were made on single crystals of Mn and Mg-Mn ferrites 50 - 60 mm long and having diameters of 5 - 7 mm. The temperature dependence of H_c near the Curie point and the initial magnetic permeability μ_0 (in a field of 0.005 oersted) were measured with an astatic magnetometer. The tem-

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perature dependence of ΔH was measured in a short circuited waveguide section at a sphere, 0.8 mm in diameter cut out of ferrite crystals. The results for ferrite with different hausmannite content are shown graphically. It is concluded that the broadening of ΔH and the increase of H_c have the same origin. On account of the inhomogeneities of the ferrite there occur fluctuations in the spontaneous magnetization near the Curie point, giving rise to a "magnetically heterogeneous" state. This causes scattering of the resonance frequencies near the Curie point. A.A. Popova is thanked for making available the ferrite single crystal. An analogous study made by A. Clogston (see below) is mentioned. There are 4 figures and 6 references: 5 Soviet-bloc and 3 non-Soviet-bloc. The 3 references to English-language publications read as follows: G. Rodrigue, J. Pippin, W. Wolf and C. Hogan, Trans.IRE an Microwave Theory Tech. MTT, 6, 83, 1958; P. -G. de Gennes, C. Kittel and A. Portis, Phys. Ref., 116, 2, 1959; A. Clogston, H. Suhl, P. Anderson, L. Walker, Phys. Chem. Solids, 1, 159, 1956.

ASSOCIATION: Institut kristallografii AN SSSR, Moskva (Institute of Crystallography, AS USSR, Moscow)

24.7900 (1055, 1144, 1147, 1163)

32650

S/126/61/012/005/002/028
E039/E135

AUTHORS: Belov, K.P., Belov, V.F., Malevskaya, L.A., Ped'ko, A.V., and Sokolov, V.I.

TITLE: Concerning the anomalous temperature dependence of the width of the ferromagnetic resonance absorption lines in ferrites

PERIODICAL: Fizika metallov i metallovedeniye, v.12, no.5, 1961, 636-643

TEXT: An investigation was made of the temperature dependence of the width of the ferromagnetic resonance absorption lines in ferrites with spinel and garnet structure (mono- and polycrystalline) in three temperature regions: near the Curie point, in the neighbourhood of the magnetic compensation point, and in the low temperature region. At the same time measurements were made of the temperature dependence of magnetic characteristics in static magnetic fields. It is shown that for monocrystalline magnesium-manganese ferrite (6.9% MgO, 37.3% MnO, 55.9% Fe_2O_3) the width of the resonance absorption line ΔH increases rapidly at about 550 °K. For polycrystalline yttrium ferrite ΔH

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Concerning the anomalous ....

remains fairly constant up to a temperature of about 560 °K at which a sharp increase again occurs; in the case of lower density ferrites of the same composition ΔH is much greater at low temperatures but falls to approximately the same value as for the higher density ferrite at 560 °K. In the case of the monocrystalline ferrite (2.2% MgO, 54% MnO, 43.6% Fe_2O_3) there is a very sudden increase in ΔH and also the coercive force H_c at the Curie point ~412 °K. For the garnet-gadolinium oxide ferrite ΔH and H_c show a rapid increase at ~270 °K. At low temperatures the ratio $\Delta H/\Delta H_K$ where ΔH_K is the line width at room temperature is given for the case of the garnet-yttrium ferrite; a marked maximum occurs about 40 °K for the monocrystalline form and at about 10 °K for the polycrystalline form. It is demonstrated that the effect of small amounts of terbia produces a very marked effect on the temperature dependence of $\Delta H/\Delta H_K$ for Y_2O_3. The temperature dependence of the magnetisation and coercive force in weak fields for garnet-gadolinium ferrite at low temperatures is also investigated. In the garnet-gadolinium ferrite there are the following types of

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BELOV, K.P.; BELOV, V.F.; MALEVSKAYA, L.A.; PED'KO, A.V.; SOKOLOV, V.I.

Anomalies of temperature dependence of the line width of ferromagnetic resonance absorption in ferrates. Fiz. met. i metalloved. 12 no.5:636-643 N '61. (MIRA 14:12)

1. Institut kristallografii AN SSSR i Fizicheskiy fakul'tet Moskovskogo gosudarstvennogo universiteta.
(Ferrates)
(Ferromagnetic resonance)

BELOV, Vladimir Fedorovich; MYAGKOV, M.M., red.; BABIKOVA, V.P., tekhn. red.

[New features in the work of the Scientific and Technical Division factory soviet] Novoe v rabote zavodskogo soveta NTO. Moskva, Profizdat, 1962. 77 p. (MIRA 16:6)

1. Predsedatel' soveta pervichnoy organizatsii nauchno-tekhnicheskogo obshchestva Kolomenskogo teplovozostroitel'nogo zavoda im. V.V.Kuybysheva (for Belov).
(Kolomna--Diesel engines--Technological innovations)
(Kolomna--Machinery industry--Management)

POLONSKAYA, F.M.; BELOV, V.F.

New method of determining moisture content of materials. Trudy NIKFI no.45:26-33 '62. (MIRA 15:9)
(Moisture--Measurement)
(Photographic emulsions--Testing)

BELOV, V.F.

Absorption of solar radiation in the free atmosphere over the Davis Sea and the Antarctic slope. Trudy TSAO no.45:82-89 '62.
(MIRA 16:10)

L 11851-65 EWT(l)/EWT(m)/EEC(t)/EWP(t)/EWP(b) Peb IJP(c)/AEDC(a)/SSD/
AFWL/AS(mp)-2/ESD(gs)/ESD(t) JD
ACCESSION NR: AP4048424 S/0181/64/006/011/3435/3437

AUTHORS: Belov, V. F.; Devisheva, M. N.; Zheludev, I. S.; Makarov, Ye. F.; Stukan, R. A.; Trukhtanov, V. A.

TITLE: Mossbauer effect in manganese and manganese-magnesium ferrites

SOURCE: Fizika tverdogo tela, v. 6, no. 11, 1964, 3435-3437

TOPIC TAGS: manganese alloy, magnesium ferrite, Mossbauer effect, saturation magnetization, internal magnetic field

ABSTRACT: The purpose of this study was to obtain information on the properties of the internal magnetic fields at the Fe^{57} in the ferrites and to obtain other data on the Mossbauer effect in solid solutions of ferrites with spinel structure and with different Mn atom contents. The absorbers used were ferrites in powdered form, mixed with paraffin and pressed into tablets of 10 cm^2 area (surface

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L 11851-65
ACCESSION NR: AP4048424

density of iron 10 mg/cm^2). The source was a stainless steel plate impregnated with Co^{57} radioactive nuclei. The internal magnetic field was determined by measuring the distance between the components of the Zeeman splitting. The results showed that the density of the s electrons (determined from the chemical shift) in the nucleus and in the investigated compounds is practically the same. The local magnetic field on the Fe nuclei decreased with increasing saturation magnetization in some ferrites and increased in others, and an explanation is offered for this difference. Orig. art. has: 3 tables.

ASSOCIATION: Institut khimicheskoy fiziki AN SSSR (Institute of Chemical Physics AN SSSR); Institut kristallografii AN SSSR, Moscow (Institute of Crystallography AN SSSR)

SUBMITTED: 09Jun64 ENCL: 00

SUB CODE: SS, MM NR REF SOV: 003 OTHER: 005

Card 2/2

L 33539-65 EPA(s)-2/EWT(m)/EPF(c)/EWP(j)/T Pc-4/Pr-4/Pt-10 RM

ACCESSION NR: AT5006931 S/2982/64/000/051/0048/0053

55
54
53+1

AUTHOR: Belash, P.M. (Professor); Paushkin, Ya.M.; Belov, V.F.; Vishnyakova, T.P.; Nechushkin, A.M.; Sokolinskaya, T.A.; Machus, F.F.

TITLE: The magnetic properties of ferrocene-containing polymers

SOURCE: Moscow. Institut neftekhimicheskoy i gazovoy promyshlennosti. Trudy, no. 51 51, 1964. Neftekhimiya, neftekhimicheskiye protsessy i neftepererabotka (Petroleum chemistry, petrochemical processes and oil refining), 48-53

TOPIC TAGS: ferrocene, polymer magnetic property, electron paramagnetic resonance, bromonaphthalene polymer, dichlorobenzene polymer, acetylferrocene, hydroxylamine

ABSTRACT: The electron paramagnetic resonance, magnetic susceptibility and magnetization of ferrocene-containing polymers was determined. The study covered previously described polymers (Dokl. Akad. Nauk v. 149, no. 4, 1963) obtained by the tert.-butyl peroxide initiated reaction of ferrocene with α-bromonaphthalene in 2:1 (I) and 1:1 (II) molar ratios or of 1:1 molar amounts of ferrocene and p-dichlorobenzene (III); and polymers obtained by polycondensation of ferrocene, acetylferrocene and hydroxylamine

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L 33539-65

ACCESSION NR: AT5006931

hydrochloride (IV) or of acetylferrocene and hydroxylamine hydrochloride (V) in the presence of zinc chloride. The EPR spectra (see Fig. 1 of the Enclosure) show high intensity and width, ΔH, indicating the presence of strong internal fields. The magnetic susceptibility was measured by a published technique and values for specific magnetic susceptibility and g factor are tabulated. The temperature dependence of the magnetic susceptibility of II indicated onset of decomposition at 400C. The g factor values, 1.950-2.0004, indicate that the ferromagnetic properties of the studied polymers are based on the organic structure, but the presence of stabilized iron oxides is not ruled out. Orig. art. has: 6 figures, 1 table and 2 formulas.

ASSOCIATION: Institut neftekhimicheskoy i gazovoy promyshlennosti, Moscow (Petrochemical and gas industry institute)

SUBMITTED: 00 ENCL: 01 SUB CODE: OC, EM

NO REF SOV: 005 OTHER: 002

Card 2/3

L 33539-65

ACCESSION NR: AT5006931 ENCLOSURE: 01

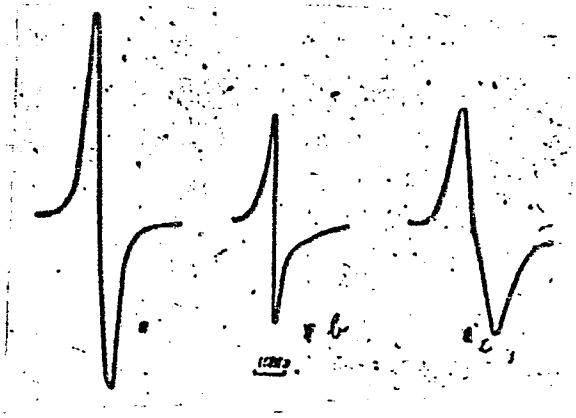

Fig. 1. EPR Spectra. a-polymer II; b-polymer IV; c-polymer V.

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L 23290-65 EWT(1)/EWT(m)/EPF(c)/EPR/ENP(j)/EEC(t)/T Pc-4/Pr-4/Ps-4/Peb IJP(c)/
ACCESSION NR: AP5000915RPL WW/RM S/0020/64/159/004/0831/0834 49 41 B

AUTHOR: Belov, V.F.; Vishnyakova, T.P.; Makarov, Ye. F.; Paushkin, Ya.; M., Sokolitskaya, T.A.; Stukan, R.A.; Trukhtanov, V.A.; Gol'danskiy, V. I. (Corresponding member AN SSSR)

TITLE: The study of ferrocene copolymers by means of the Moessbauer effect

SOURCE: AN SSSR. Doklady, v. 159, no. 4, 1964, 831-834

TOPIC TAGS: ferrocene copolymers, ferroorganic polymer, Moessbauer effect, polymer crosslinking, gamma absorption spectrum

ABSTRACT: The electronic structure of iron in ferrocene polymers and the crosslinking of such polymers was studied from Moessbauer spectra, measuring the dependence of the resonant absorption of γ-ray quanta on the relative velocities of source and absorber. Cobalt-57 served as the source, and the polymers used as absorbers included soluble and insoluble polyferrocenes, polyvinylferrocenes, and copolymers of ferrocene with acetone, alpha-bromonaphtalene, p-dichlorobenzene, salicylaldehyde, benzaldehyde,

L 23290-65
ACCESSION NR: AP5000915

indicating the high movability of ferrocenyl radicals in the polymeric structure. Insoluble polymers showed a marked decrease in quadrupole scattering as compared with ferrocene derivatives or soluble polymers. The spectra showed characteristics observed for ferricene salts and the formation of ferricene cations by electron detachment from iron. Moessbauer effects at room temperature were significantly higher than the effects measured for the soluble polymers. The difference is ascribed to the crosslinked structure and rigidity of molecules in the insoluble polymers. The presence of two doublets in the 80K spectra of insoluble polymers corresponds to the electronic structures of iron in conjugated three-dimensional links and in ordinary ferrocenyl links of the linear polymer fraction. Thus, the Moessbauer spectra can be evaluated to estimate the degree of crosslinking in polymers of ferrocene. By accounting for the concentration of iron in the polymers and for the dimensions of absorbers, the measured values can be reduced to the absolute probability of Moessbauer effects in ferrocene polymers, T_a^1. The degree of crosslinking is defined by the relation

$$\xi = \frac{T'_{a_1}}{T'_{a_1} + T'_{a_2}} \cdot 100\%,$$

L 23290-65
ACCESSION NR: AP5000915

2

where a_1 refers to linear and a_2 to crosslinked fractions of the polymer. Orig. art. has: 1 table, 1 figure and 2 formulas.

ASSOCIATION: Institut khimicheskoy fiziki Akademii nauk SSSR (Chemical physics institute, Academy of Sciences, SSSR); Moskovskiy institut neftekhimicheskoy i gazovoy promyshlennosti imeni I. M. Gubkina (Moscow Institute of the Petrochemical and gas Industry)

SUBMITTED: 22Jul64 ENCL: 00 SUB CODE: OC

NO REF SOV: 006 OTHER: 001

Card 3/3

L 58456-65 EWT(1) Peb DIAAP/EJP(c) 27
ACCESSION NR: AP5013669 22 UR/0386/65/001/001/0031/0036
B

AUTHOR: Gol'danskiy, V. I.; Trukhtanov, V. A.; Devishova, M. M.; Belov, V. F.

TITLE: Super-exchange induction of magnetic fields at the nuclei of nonmagnetic atoms

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki. Pis'ma v redaktsiyu. Prilozheniye, v. 1, no. 1, 1965, 31-36.

TOPIC TAGS: Mossbauer effect, tin, yttrium iron garnet, exchange induction, Gamma resonance

ABSTRACT: The authors report the experimental observation of indirect exchange induction of magnetic fields at nuclei of nonmagnetic Sn^{119} atoms introduced into an iron-garnet structure with general chemical formula $Y_{3-x}Ca_xSn_xFe_{5-x}O_{12}$. The ferrite was prepared by the usual technique of sintering the component oxides. Investigations with the aid of nuclear gamma resonance (Mossbauer effect) yield, for example for a sample with $x = 0.25$, a distinct hyperfine magnetic splitting of the ground and first excited states of the Sn^{119} nuclei. The interaction between the

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Sn ions and the magnetic iron ions is apparently produced by the mechanism of indirect exchange via the oxygen ions, and such an indirect exchange induces at the tin nuclei rather large magnetic fields, exceeding 200 kOe at t = -196C. The fact that there is no chemical shift of the center of gravity of the spectrum relative to the $Sn^{119}O_2$ source is evidence against the direct interaction of the tin and iron atoms. The gamma-resonance spectrum for iron (obtained with a Co^{57} source in chromium) has a fine structure typical of the two sublattices of yttrium iron garnet, with two values of magnetic fields at the iron. With increasing temperature the magnetic field at the Sn^{119} nuclei decreased simultaneously with the decreasing field at the Fe^{57} nuclei and disappeared completely when the iron ions went over into the paramagnetic state. The conductivity was quite small and increased with increasing temperature, whereas the magnetic field on the iron and tin nuclei increased at the same time. The magnetic moment of the first excited state of Sn^{119}, calculated from the obtained nuclear gamma-resonance spectra, is 0.67 ± 0.01 nuc. magnetons. "The authors are grateful to Yu. M. Kagan for a very useful discussion, to Ye. F. Makarov for help with the work, to S. S. Kurochkin for the use of the 2048-channel analyzer, and to Ye. L. Frankevich for help with measuring the conductivity of the samples. Orig. art. has: 2 figures.

L 58456-65
ACCESSION NR: AP5013669

ASSOCIATION: Institut khimicheskoy fiziki Akademii nauk SSSR (Institute of Chemical Physics, Academy of Sciences, SSSR)

SUBMITTED: 15Feb65 ENCL: 00 SUB CODE: SS, NP

NR REF SOV: 001 OTHER: 006

Card 3/3

BELOV, V.F.

Determination of the constant of magnetic anisotropy using ferromagnetic resonance data and dynamometric measurements in ferrites. Trudy MINKHiGP no.52:131-132 '64.
(MIRA 18:6)

BELOV, V.F.; NECHUSHKIN, A.M.

Ferromagnetic resonance and Faraday effect in some ferrites with spinel and garnet structures. Trudy MINKHiGP no.52:133-135 '64. (MIRA 18:6)

L 9278-66 EWT(1); I/EWA(m)-2 IJP(c) GG

ACC NR: AP5027377 SOURCE CODE: UR/0371/65/000/005/0015/0020

AUTHOR: Belov, V. F.--Belove, V.; Karavayev, Ye. V.--Karavajevs, J.; Skotar', S. A.--Skotars, S.

ORG: none

TITLE: Microwave system for studying the interaction of electromagnetic waves with ionized gases

SOURCE: AN LatSSR. Izvestiya. Seriya fizicheskikh i tekhnicheskikh nauk, no. 5, 1965, 15-20

TOPIC TAGS: microwave oscillator, electromagnetic wave diffraction, electromagnetic interaction, ionized gas, microwave technology, shf oscillator, waveguide

ABSTRACT: A microwave system for measuring the basic electromagnetic parameters of ionized gases by recording their interaction with electromagnetic waves is described. The basic equipment is a superhigh-frequency (λ = 3 cm) oscillator equipped with a special waveguide containing measuring probes and a bridge-type device for compensating the initial reflections. The system performs the following functions: 1) continuous measurement of antenna input impedance; 2) continuous measurement of impedance at any point of the waveguide; 3) accurate recording of signals reflected from ionized gases; 4) measurement of the conductivity of ionized gases both by reflected and transmitted signals; 5) study of radio wave attenuation and reflection phenomena in

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L 9278-66

ACC NR: AP5027377

magnetized ionized gases; and 6) study of the effect of the frequency of radio signals on the character of their reflection from transmission through ionized gases. Measurements conducted with this system have yielded results which are fully in agreement with those obtained by the circuit (loop-analysis) method. Orig. art. has: 4 figures and 1 table. [JR]

SUB CODE: 09,20/ SUBM DATE: 18Mar65/ ORIG REF: 002/ OTH REF: 001/ ATD PRESS: 4153

Card 2/2

NECHUSHKIN, A.M.; BELASH, P.M.; BELOV, V.F.; SARKISOV, A.L.

Semiconductor pressure gauges for gas mixtures. Izv. vys. ucheb. zav.; neft' i gaz 7 no.11:89-91 '64. (MIRA 18:11)

1. Moskovskiy institut neftekhimicheskoy i gazovoy promyshlennosti im. akademika I.M. Gubkina.

GOL'DANSKIY, V.I.; BELOV, V.F.; DEVISHEVA, M.N.; TRUKHTANOV, V.A.

Use of the nuclear gamma-resonance method in studying internal magnetic fields on Fe^{57} nuclei in Ni - Zn ferrites. Zhur.eksp. i teor.fiz. 49 no.6:1681-1688 D '65.

(MIRA 19:1)

1. Institut khimicheskoy fiziki AN SSSR. Submitted May 25, 1965.

L 07120-67 EWT(1) IJP(c) GG

ACC NR: AT6017646 (A) SOURCE CODE: UR/2982/65/000/058/0098/0100

AUTHOR: Belov, V. F.; Aliyev, L. A.

39
B+T

ORG: none

TITLE: Nuclear device for measuring magnetic field

SOURCE: Moscow. Institut neftekhimicheskoy i gazovoy promyshlennosti. Trudy, no. 58, 1965. Elektronika i vychislitel'naya tekhnika v neftyanoy, gazovoy i khimicheskoy promyshlennosti (Electronics and computer engineering in the petroleum, gas, and chemical industry), 98-100

TOPIC TAGS: NMR, NMR spectroscopy, magnetic field measurement

ABSTRACT: A version of the device for exact measurement of magnetic field by the NMR method is briefly described. The device is based on the resonance absorption of r-f energy by water protons. A constant magnetic field produced by the NS magnet (see figure) of an RE-1301 radiospectroscope is oriented at right angles to the r-f field. The magnetic field is stabilized by an electronic device in

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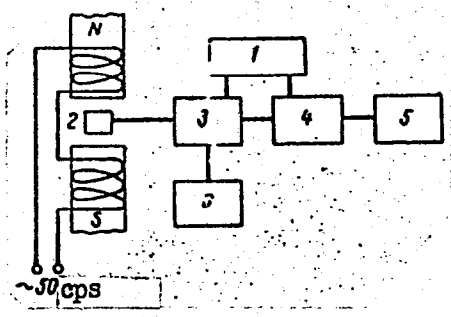
L 07120-67

ACC NR: AT6017646

D



the 50-cps circuit. The r-f field is produced by oscillator-detector 3. The oscillatory-circuit coil is wound on a quartz vial containing distilled water and placed in airgap 2. Wavemeter 6 measures the frequency. A grid-leak-detected signal is applied to 1-f (gain 500) amplifier 4. NMR signal is recorded by oscillograph 5. The field strength measuring range is 1000—4000 oe (magnetic semiconductor measurements); total error, 7%. Orig. art. has: 3 figures and 1 formula.

SUB CODE: 18,20/ SUBM DATE: none / ORIG REF: 000 / OTH REF: 002

Card 2/2

EWI(1)/EWI(m)/EWP(t)/ETI IJP(c) JD/JG

ACC NR: AP6030978 SOURCE CODE: UR/0181/66/008/009/2791/2793

AUTHOR: Belov, V. F.; Aliyev, L. A.

43
B

ORG: Institute of Crystallography, AN SSSR, Moscow (Institut kristallografii AN SSSR)

TITLE: Magnetic fields on Fe^{57} nuclei in yttrium ferrite garnets $Y_3Fe_{5-x}Al_xO_{12}$

SOURCE: Fizika tverdogo tela, v. 8, no. 9, 1966, 2791-2793

TOPIC TAGS: Mossbauer spectrum, yttrium compound, garnet, magnetic field measurement

ABSTRACT: The object of the study was to determine the effect of substituting Al^{3+} ions for Fe^{3+} ions on the magnetic field on Fe^{57} nuclei in an yttrium ferrite garnet. The magnetic field was determined from the distance between the components of the Mossbauer spectrum, taken by using Co^{57} in stainless steel. Samples of the general chemical formula $Y_3Fe_{5-x}Al_xO_{12}$ (where x was varied from 0 to 1.4) were prepared by the usual ceramic method. At low Al concentrations (up to x = 1), no appreciable broadening of the absorption lines was observed in the Mossbauer spectra, i. e., the introduction of aluminum into the garnet up to x = 1 does not cause any appreciable magnetic disturbances. At $x \geq 1.2$, magnetic inhomogeneities caused by an uneven distribution of Al in the lattice begin to be manifested, and the spectrum consists of the superposition of several Zeeman splitting patterns. The magnetic fields on Fe^{57} nuclei having tetrahedral and octahedral oxygen surroundings were found to decrease with rising

Card 1/2

Card 2/2

BELOV, V. F.

49-4-21/23

AUTHORS: B. S. Neporent, V. F. Belov, O. D. Dmitriyevskiy, G. A. Zaytsev, V. G. Kastrov, M. S. Kiseleva, L. A. Kudryavtseva and I. V. Patalakhin.

TITLE: Experience gained in direct measurement of the distribution of the humidity of the atmosphere by means of the spectral method. (Opyt pryamogo izmereniya vysotnogo raspredeleniya vlazhnosti atmosfery spektral'nym metodom).

PERIODICAL: Izvestiya Akademii Nauk, Seriya Geofizicheskaya, 1947, No.4, pp. 552-555 (USSR).

ABSTRACT: Some recent American communications (Refs.5-7) refer to investigating the spectrum of the Sun in the infrared range during flights in the upper layers of the atmosphere, in which observation of absorption bands of water vapours are mentioned and views are expressed on the possible concentrations of these vapours. In this paper the results are described of the first attempts to determine directly the content of water vapour in the atmosphere by means of specially designed spectral apparatus. The operation of the instrument was described in detail by Neporent, B.S. et alii (Ref.8); it consists of a step-wise vacuum monochromator with a diffraction lattice of 300 lines/mm of the size 50 x 70 mm which subdivides the infrared range

Card 1/4

Experience gained in direct measurement of the distribution of the humidity of the atmosphere by means of the spectral method.

into five sections (1.24, 1.40, 1.50, 1.88, 2.2 μ), the wave-lengths 1.40 and 1.88μ belong to the absorption bands of water vapour; utilisation of two bands is provided for extending the range of the measured water concentrations. The wave-lengths 1.24, 1.50 and 2.2μ fall between individual bands and serve for determining the initial intensities in the bands 1.40 and 1.88μ by means of interpolation. The linear dispersion of the instrument equals 100 a/mm; the entry and exit slots are 1.5 mm wide. Illumination of the input slot is effected by means of a source with a circular emanating surface fitted with a dispersion plate of magnesium oxide. Experiments carried out at ground level showed that, in the operating range of the spectrum, the role of radiation scattered by the sky is insignificant. The measured radiation is modulated with a frequency of 850 c.p.s. using as a receiver of the radiation a cooled PbS photo resistance. After amplification, the signals are transmitted by radio to the ground. In addition to the basic signals transmitted in the operating position of the diffraction lattice (which is turned by means of a cam), calibrating signals are

Experience gained in direct measurement of the distribution of the humidity of the atmosphere by means of the spectral method.

water concentration in the atmosphere on altitude, in mm of water precipitated per 1 km of the layer. Although the obtained data require further checking, they do indicate the usefulness of the described method and apparatus for such measurements. Increased accuracy and sensitivity of the instrument for measuring low water concentrations could be achieved by using more intensive absorption bands.
There are six figures and 12 references, 4 of which are Slavic.

SUBMITTED: November 13, 1956.

AVAILABLE: Library of Congress.

Card 4/4

GOL'DANSKIY, V.I.; TRUKHTANOV, V.A.; DEVISHEVA, M.N.; BELOV, V.F.

Superexchange induction of magnetic fields on nonmagnetic atomic nuclei. Pis'. v red. Zhur. eksper. i teor. fiz. 1 no.1:31-36 Ap '65. (MIRA 18:9)

1. Institut khimicheskoy fiziki AN SSSR.

L 01799-66 EWT(l)/EWT(m)/T/EWP(t)/EED-2/EWP(b)/EWA(c) JD

ACCESSION NR: AT5013411 UR/2982/64/000/052/0133/0135

AUTHOR: Belov, V. F.; Nechushkin, A. M.

TITLE: The ferromagnetic resonance and Faraday effect in certain ferrites having a spinel or garnet structure

SOURCE: Moscow. Institut neftekhimicheskoy i gazovoy promyshlennost. Trudy. no. 52, 1965. Avtomatika i telemeknanika v neftyanoy i gazovoy promyshlennosti (Automatic control in the petroleum and gas industry), 133-135

TOPIC TAGS: ferrite, Faraday effect, garnet, ferromagnetic resonance, resonance line

ABSTRACT: The authors studied the ferromagnetic resonance and of the Faraday effect in ferrite-spinel and ferrite-garnet monocrystals at 8300 Mc. The method was described earlier by one of the authors (V. F. Belov, Kristallografiya, v. r, no. 6, 1960,p. 912). The chemical composition of the various spinels and garnets used is given together with the measured data concerning the saturation magnetization, g-factor, magnetic anisotropy constant, width of the ferromagnetic resonance line (as a function of crystal orientation), and specific polarization plane rotation angle (as a function of the applied magnetic field). Orig. art. has: 2 figures and 3 tables.

Card 1/2

L 01799-66

ACCESSION NR: AT5013411

ASSOCIATION: Institut neftekhimicheskoy i gazovoy promyshlennost. Moscow (Institute of the Petroleum Chemistry and Gas Industries) 44,55

SUBMITTED: 00 ENCL:00 SUB CODE: MI, SS

NO REF SOV: 001 OTHER 002

Card 2/2

BELOV, V.F.

Measurement of integral diffusion of light. Meteor.i gidrol. no.1: 58-61 Ja '52. (MLRA 8:9)

1. Nauchno-issledovatel'skiy institut gidrometeorlogicheskogo priborostroyeniya, Moskva.
(Light--Scattering)

24.3200
9.9300

83798
S/035/59/000/003/004/039
A001/A001

Translation from: Referativnyy zhurnal, Astronomiya i Geodeziya, 1959, No. 3, p. 24, # 1866

AUTHOR: Belov, V. F.

TITLE: An Investigation of Scattering Indicatrices in the Troposphere and Lower Stratosphere

PERIODICAL: Tr. Tsentr. aerol. observ., 1957, No. 23, pp. 63-77

TEXT: The author describes the method and results of investigating light scattering in the atmosphere at various altitudes above sea level. The determination of the scattering indicatrix is performed by a direct measurement of the brightness of the day sky with a photometer at different angular distances from the Sun. A photomultiplier of the ФЭУ-18 (FEU-18) type serves as a receiver; it is rotated by an electric motor around the vertical axis at a speed of 1 revolution per 30-40 sec. To restrict the light flux during the transit of the photometer optical axis across the Sun, a neutral attenuator is switched by means of an electronic relay controlled by the photomultiplier. Blue, green and orange filters were used. The position of the device relative

Card 1/2

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A001/A001

An Investigation of Scattering Indicatrices in the Troposphere and Lower Stratosphere

to the Sun is determined from the photographs of a camera mounted in the upper part of the device. The devices are lifted by the captive balloon up to an altitude of 5-6 km, by the free stratosphere balloon up to 8 km, and by the ЦАО (TsAO) automatic stratosphere balloon up to 19 km. The measurements were carried out during the cloudless sky or with clouds of the upper and middle cloud sheet of 1-2 mark of cloudiness. The device altitude was determined from the barogram of the altimeter, a pressure pickup and radar data. The following results were obtained. 1) The coefficients of indicatrix asymmetry decrease with altitude in the troposphere layer up to 1,000 m, particularly rapid in the first 250-300 m layer. 2) The changes relative to the light scattering coefficient for angle $\beta = 25^{\circ}$ are analogous to changes of asymmetry coefficient. 3) Up to an altitude of 19 km the scattering indicatrix is still considerably extended forwards, which indicates turbidity of the atmosphere.

L. A. Biryukova

Translator's note: This is the full translation of the original Russian abstract.

Card 2/2

BELOV, V.F.

(9)

PHASE I BOOK EXPLOITATION SOV/3606

Nauchnaya konferentsiya po problemam meteorologii Antarktiki, Moscow, 1959

Tezisy dokladov (Theses of Reports at the Scientific Conference on Meteorological Problems in Antarctica, Moscow, 1959) Moscow, Gidrometeoizdat (Otd-niye) 1959. 47 p. 1,000 copies printed.

Ed.: O.G. Krichak; Tech. Ed.: I.M. Zarkh.

PURPOSE: The publication is intended for meteorologists, particularly for those interested in the climatology of Antarctica.

COVERAGE: This book contains summaries of thirty-five reports presented at the Scientific Conference on Meteorological Problems in Antarctica, held in Moscow, October 26 to 28, 1959. The summaries are arranged in four groups: (1) general problems of the geography of Antarctica; (2) atmospheric circulation; (3) radiation balance, heat balance, climate and special features of individual elements; (4) methods of observation and measurement. No personalities are mentioned. There are no references.

PART III. RADIATION BALANCE, HEAT BALANCE, CLIMATE, AND THE CONDITION OF INDIVIDUAL ELEMENTS

PART IV. METHODS OF OBSERVATIONS AND MEASUREMENTS

AVAILABLE: Library of Congress (QC994.9.N33)

Card 9/9

TM/sh
7-1-60

BELOV, V.F.

(10)

PHASE I BOOK EXPLOITATION SOV/3606

Nauchnaya konferentsiya po problemam meteorologii Antarktiki, Moscow, 1959

Tezisy dokladov (Theses of Reports at the Scientific Conference on Meteorological Problems in Antarctica, Moscow, 1959) Moscow, Gidrometeoizdat (Otd-niye) 1959. 47 p. 1,000 copies printed.

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PART III. RADIATION BALANCE, HEAT BALANCE, CLIMATE, AND THE CONDITION OF INDIVIDUAL ELEMENTS

Card 6/9

BELOV, V.G.

BELOV, V.G., inzhener; KOPANOV, M.A., tekhnik.

How to check working roll surfaces on cold rolling mills. Metallurg no.6:30-31 Je '56. (MIRA 9:9)

1.Rukoveditel' prokatnoy gruppy TsZL (for Belov).2.Nachal'nik uchastka shlifovki valkov (for Kopanov).3.Leningradskiy staleprokatnyy i provolochno-kanatnyy zavod imeni Meletova.
(Rolls (Iron mills))

BELOV, V.I., inzhener; KUKUSHKIN, V.I., inzhener.

Production of hollow bricks at the Tallinn Brick Factory. Stroi.prom. vol. 31 no.9:43-45 S '53. (MLRA 6:9)
(Hollow tiles)

BELOV, V.I.; KINZBURGSKIY, I.B.; SOKOLOV, Yu.B., nauchnyy red.; GRINBERG, S.M., red.; GARNUKHINA, L.A., tekhn.red.

[Ceramic building materials of great utility; practices of the Tallinn and "Azeri" brick factories] Effektivnaia stroitel'naia keramika; iz opyta raboty kirpichnykh zavodov Tallinskogo i "Azeri." Moskva, Gos. izd-vo lit-ry po stroit. materialam, 1957. 51 p. (MIRA 12:2)

(Estonia--Ceramics)

BELOV, V. I.

"Investigation of Variations in the Operation of Automotive and Tractor Gear Boxes During the Wear of Base Surfaces." Cand Tech Sci, Leningrad Agricultural Inst, Min Higher Education, Leningrad, 1955. (KL, No 15, Apr 55)

SO: Sum. No. 704, 2 Nov 55 - Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (16).

BELOV, V.I.

Improved design of semiautomatic stamping machines. Izobr. v SSSR 1 no.5:24-26 [illegible] '56. (MIRA 10:3)
(Punching machinery)

Belov, V.I

USSR/Chemistry - Liquid air separation FD-881

Card 1/1 Pub.50 - 14/24

Author : Belov, V. I., Sorkin, D. I.

Title : Improvement of production control in the operation of equipment for the separation of air

Periodical : Khim. prom., No 6, 370-371 (50-51), Sep 1954

Abstract : Describe a production control appliance for determining the content of oxygen in nitrogen. The procedure is colorimetric and is based on the oxidation of colorless Cu $(NH_3)_2Cl$ to a colored cupric compound. One figure.

Institution :

Submitted :

USACHEV, P.M.; LESIK, N.P.; OVNATANOV, G.T.; YECHEISTOV, A.I.; [redacted]; GENS, M.A.; MISHAKOV, V.N.

Hydraulic fracturing of strata and the underground investigation of fractured zones. Neft. khoz. 36 no.5:28-37 My '58. (MIRA 11:6)
(Oil wells--Hydraulic fracturing)

BELOV, V.I.

AUTHOR: Belov, V.I., Engineer 135-58-6-12/19

TITLE: Restoring the Dimensions of Parts by Vibrating-arc Surfacing (Vosstanovleniye razmerov detaley vibrodugovoy naplavkoy)

PERIODICAL: Svarochnoye Proizvodstvo, 1958, Nr 6, pp 35 (USSR)

ABSTRACT: A new machine for vibro-arc resurfacing of worn machine parts was developed by carrying out minor alterations on known designs of vibro-arc machines produced by the Chelyabinskiy traktornyy zavod (Chelyabinsk Tractor Plant). The 0.1 kw motor and the automatic welding head of the semi-automatic welder "PSh-5" were used, along with the welding generator "PS-300" which was slightly changed as shown in the diagram (Figure 1). The plant uses the machine for restoring various machine tools and automobile parts. The resurfacing process of a push rod of the automobile "GAZ-51" is described. The position of the welding wire and torch in the work process is illustrated (Figure 2). The economic effect achieved by the resurfacing method instead of producing new parts is illustrated by a table. There are 2 figures.

Card 1/2

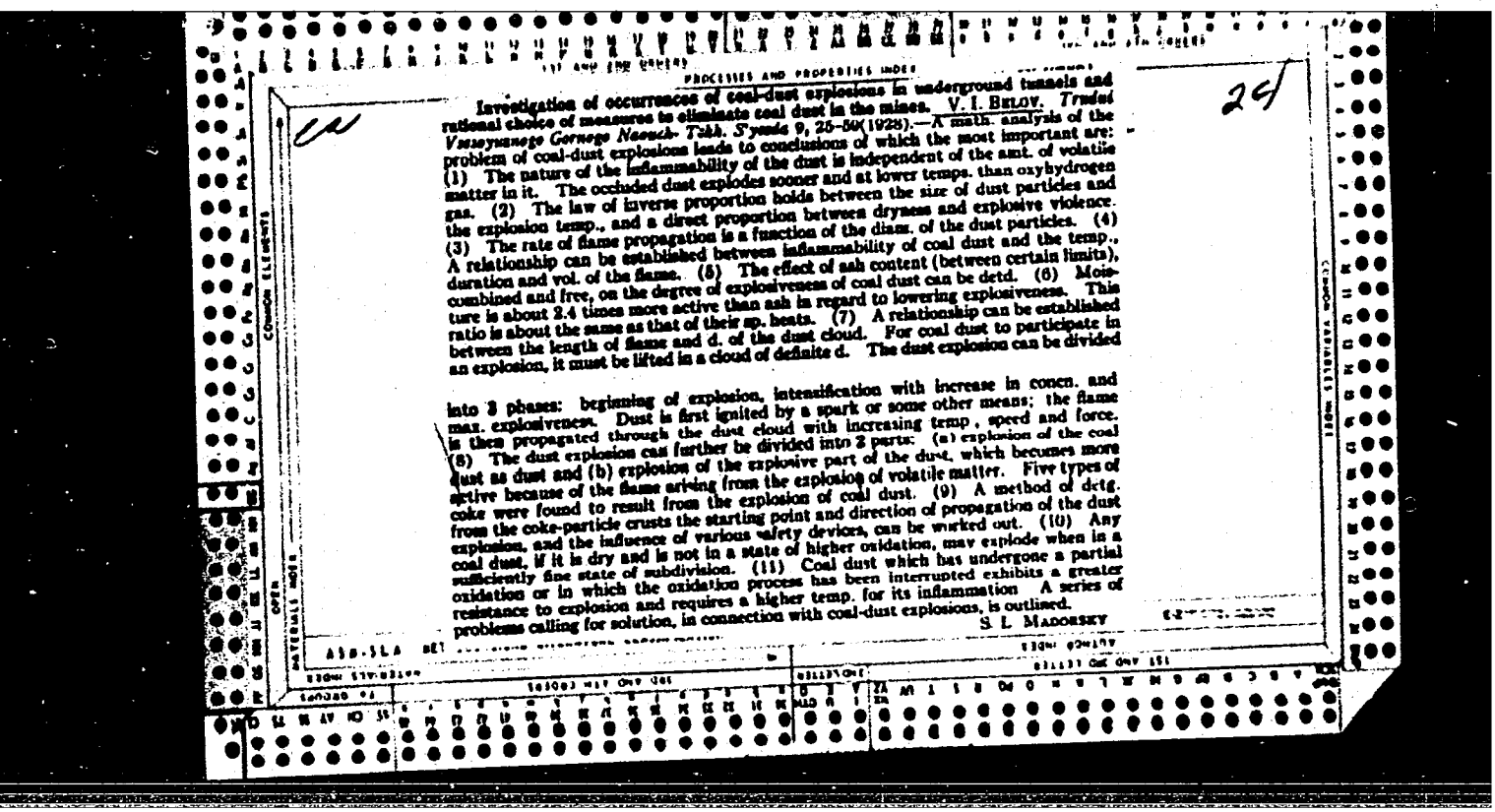
135-58-6-12/19

Restoring the Dimensions of Parts by Vibrating-arc Surfacing

ASSOCIATION: Prokhladnenskiy remontnyy zavod (Prokhladnenskiy Repair Plant)

AVAILABLE: Library of Congress

Card 2/2



PROCESSES AND PROPERTIES INDEX

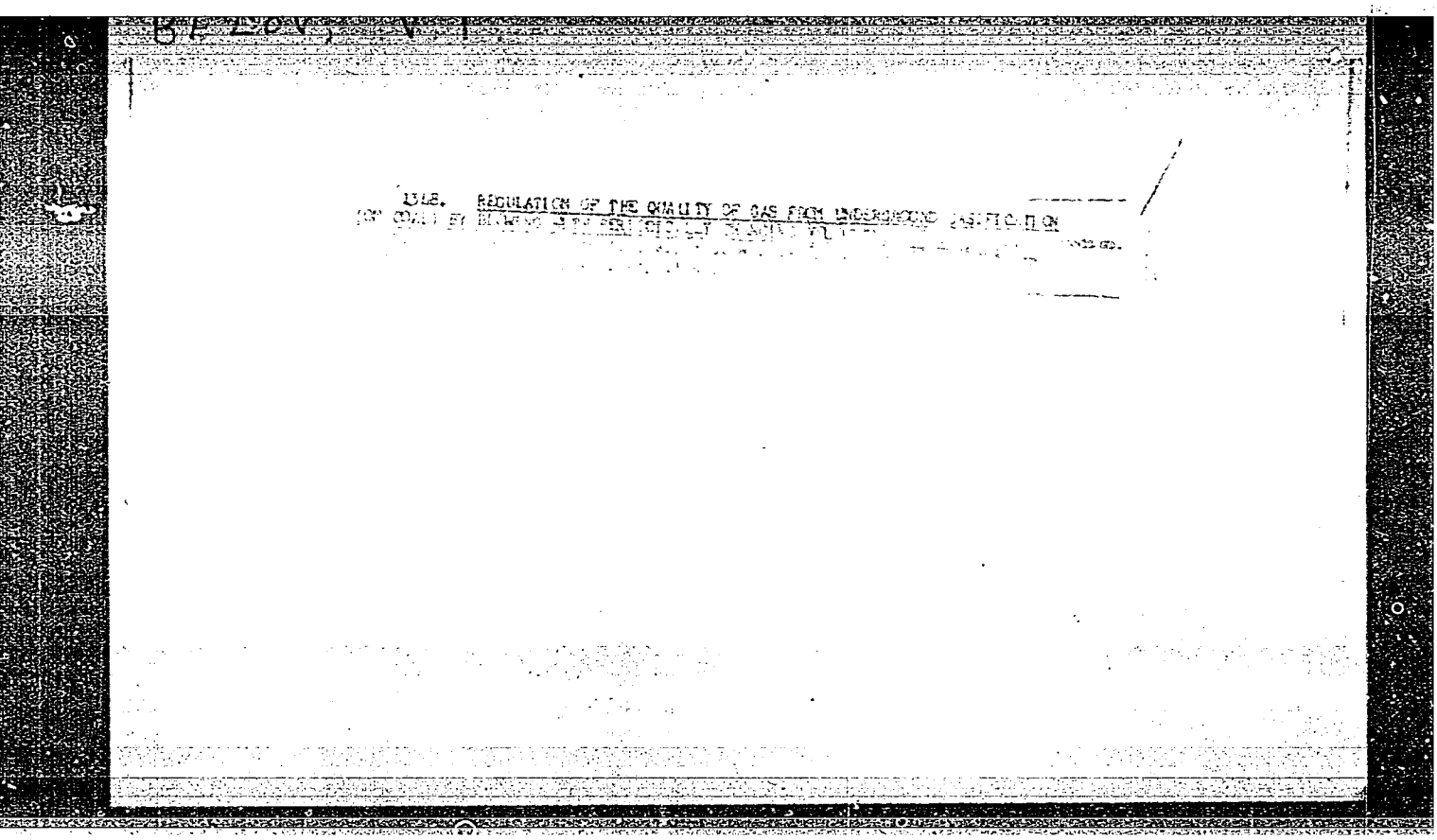
Investigation of occurrences of coal-dust explosions in underground tunnels and rational choice of measures to eliminate coal dust in the mines. V. I. Belov. *Trudui Vsesoyuznogo Gornogo Naouch. Tekh. S'yezda* 9, 25–50(1928).—A math. analysis of the problem of coal-dust explosions leads to conclusions of which the most important are: (1) The nature of the inflammability of the dust is independent of the amt. of volatile matter in it. The occluded dust explodes sooner and at lower temps. than oxyhydrogen gas. (2) The law of inverse proportion holds between the size of dust particles and the explosion temp., and a direct proportion between dryness and explosive violence. (3) The rate of flame propagation is a function of the diam. of the dust particles. (4) A relationship can be established between inflammability of coal dust and the temp., duration and vol. of the flame. (5) The effect of ash content (between certain limits), combined and free, on the degree of explosiveness of coal dust can be detd. (6) Moisture is about 2.4 times more active than ash in regard to lowering explosiveness. This ratio is about the same as that of their sp. heats. (7) A relationship can be established between the length of flame and d. of the dust cloud. For coal dust to participate in an explosion, it must be lifted in a cloud of definite d. The dust explosion can be divided into 3 phases: beginning of explosion, intensification with increase in concn. and max. explosiveness. Dust is first ignited by a spark or some other means; the flame is then propagated through the dust cloud with increasing temp., speed and force. (8) The dust explosion can further be divided into 2 parts: (a) explosion of the coal dust as dust and (b) explosion of the explosive part of the dust, which becomes more active because of the flame arising from the explosion of volatile matter. Five types of coke were found to result from the explosion of coal dust. (9) A method of detg. from the coke-particle crusts the starting point and direction of propagation of the dust explosion, and the influence of various safety devices, can be worked out. (10) Any coal dust, if it is dry and is not in a state of higher oxidation, may explode when in a sufficiently fine state of subdivision. (11) Coal dust which has undergone a partial oxidation or in which the oxidation process has been interrupted exhibits a greater resistance to explosion and requires a higher temp. for its inflammation. A series of problems calling for solution, in connection with coal-dust explosions, is outlined.

S. L. Madorsky

BELOV, V.I., doktor tekhnicheskikh nauk; MEDVEDEV, B.I., kandidat tekhnicheskikh nauk.

Air temperature in longwalls as a factor limiting the length of longwalls. Bezop. truda v prom. 1 no.4:27-29 Ap '57. (MLRA 10:6)

1. Donetskiy industrial'nyy institut im. N.S. Khrushcheva.
(Coal mines and mining)



BELOV, V.I., doktor tekhn.nauk; BELOVA, Ya.A.

Physical and mechanical testing of coal. Podzem.gaz.ugl. no.1:23-24 '58. (MIRA 11:4)

1. Donetskiy industrial'nyy institut, g. Stalino.
(Coal--Testing)

BELOV, V.I., prof., doktor tekhn. nauk; BELOV, S.A., gornyy inzhener

Electric modeling of mine ventilation. Ugol' Ukr. 3 no.7:20-21 Jl '59. (MIRA 12:11)
(Mine ventilation--Electromechanical analogies)

BELOV, V.I., prof., doktor tekhn.nauk; CHURKIN, V.K., dotsent

Inspection of dust and gas control systems of operating stoping machinery. Ugol' Ukr. 5 no.10:44-45 O '61. (MIRA 14:12)
(Coal mines and mining--Safety measures)

BELOV, V.I.

Stand for rolling and testing tractor transmission cases.
Uch. zap. Mord. gos. un. no.15:81-86 '63.
(MIRA 18:6)

BELOV, Vladimir Ivanovich; ARTAMONOV, D.S., red.; MIKHEYEV, N.I., red.

[Assembling industrial ventilation systems] Montazh sistem promyshlennoi ventiliatsii. Kuibyshev, Kuibyshevskoe knizhnoe izd-vo, 1963. 35 p. (MIRA 17:4)

1. Brigadir slesarey montazhnikov tresta "Promventilyatsiya" (for Belov).

BELOV, V.I.; LAVROVA, N.V.

Device for screwing and unscrewing sucker rods. Nefteprom. delo no.6:15-16 '64. (MIRA 17:9)

1. Nefteprom yslovoye upravleniye "Oktyabr'neft'".

ACCESSION NR: AT4042434 S/0000/64/000/000/0021/0041

AUTHOR: Atlas, P. M., Belov, V. I., Margolina, M. L.

TITLE: Unified (standardized) pneumatic elements and their use in the development of pneumo-automatic devices

SOURCE: Vsesoyuznoye soveshchaniye po pnevmo-gidravlicheskoy avtomatike. 5th, Leningrad, 1962. Pnevmo- i gidroavtomatika (Pneumatic and hydraulic control); materialy* soveshchaniya, Moscow, Izd-vo Nauka, 1964, 21-41

TOPIC TAGS: automation, control system, automatic control, pneumatic control system, pneumatic element, USEPPA system

ABSTRACT: The article discusses the "universal system of industrial pneumo-automatic elements" (also known in its abbreviated form "USEPPA"), which has been developed by the Institut avtomatiki i telemekhaniki (Institute for Automation and Telemechanics) in cooperation with the "Tizpribor" plant. The USEPPA consists of a set of universal elements which operate on the discrete and continuous principle. The USEPPA system makes it possible to create a large variety of instruments and devices for industrial

Card 1/3

ACCESSION NR: AT4042434

automation purposes. Different types of regulators in series production at the "Tizpribor" plant are described, and intermittent-action regulators (proportional, proportional-integral, multichannel) are said to be in the planning stage. At the present time, the USEPPA system includes 20 different elements which perform a number of very simple operations (pneumatic relays, comparison and adding elements, pneumatic resistances and capacitances, memory units, etc). In terms of their design, all the elements are constructed of square sections. The interconnection of the elements is accomplished by the use of plug boards, with the elements installed by means of screw-in type tubes or stems. The arangement of the recesses which accommodate these connecting stems has also been standardized. The elements are coupled together through apertures in the stems and channels in the plastic plug boards. The boards are glued together from three thin plates, with channels machined from both sides of the surface of the center plate. If an instrument consists of several boards, rubber tubing is used to connect them. The range in the signals detectable by the continuous pneumatic elements is 0.2 - 1 kgs/cm^2, with 0 and 1.4 kgs/cm^2 selected as the discrete signals. Instrumentation consisting of these elements may be used under fire- and explosion-proof conditions at a temperature

Card 2/3

ACCESSION NR: AT4042434

of 5-50C and humidity of up to 80%. The article includes brief technical descriptions of all the elements, as well as of the various instruments and regulators using USEPPA elements. Orig. art. has: 27 figures.

ASSOCIATION: none

SUBMITTED: 29Jan64 ENCL: 00

SUB CODE: IE NO REF SOV: 000 OTHER: 000

Card 3/3

L 44382-66 EWT(1) FDN/GW

ACC NR: AP6029870 SOURCE CODE: UR/0413/66/000/015/0011/0011

INVENTOR: Belov, V. I.; Shevaldin, I. Ye.; Shokhin, V. F.

36

ORG: none

TITLE: A method of producing heat insulation in boreholes in permafrost regions. Class 5, No. 184205

B

SOURCE: Izobret prom obraz tov zn, no. 15, 1966, 11

TOPIC TAGS: permafrost, thermal insulation, borehole, drilling machine

ABSTRACT: A method of thermal insulation of boreholes drilled in permafrost regions is described. To prevent the cleaning fluid from freezing during circulation cutoff

Fig. 1. Borehole

1 - Inner column of casing pipes;
2 - outer column of casing pipes;
3 - reverse valve.

Card 1/2 UDC: 622.245.01

L 44382-66
ACC NR: AP6029870

and the formation of hydrate during the subsequent exploration of the well, the space between the two columns of concentric casing pipes is filled with air. Whenever necessary, the air can be periodically blown through by means of reverse valves (see Fig. 1) installed in the lower part of the inner column. Orig. art. has: 1 figure. [CS]

SUB CODE: 08/ SUBM DATE: 15May65/ ATD PRESS: 5077

Card 2/2

BELOV, V.I.

KHMYRITS, L.; MOLDOVANSKAYA, G.I.; BELOV, V.I.; NIKOLENKO, L.N.

Obtaining aromatic principles from alkyl phenols. Khim.nauka i prom. 2 no.5:658-659 '57. (MIRA 10:12)

1.Vsesoyuznyy nauchno-issledovatel'skiy institut sinteticheskikh i natural'nykh dushistykh veshchestv.
(Phenols) (Perfumes)

BERNSHTEYN, M.A.; BLOKH, S.S.; BELOV, V.I.

Certain results of deep-well investigations of gas wells with MGG-2_u and DGM-4/2 manometers. Gaz. prom. 9 no.4:7-10 '64.
(MIRA 17:8)

1. BELOV, V. K.

2. USSR (600)

4. Turnas, P. A.

7. Principles of grassland agriculture on peat soils." N. F. Lebedevich, and "Agricultural utilization of marshland." P. A. Turnas. Reviewed by V. K. Belov. Sov. kniga no. 11, 1952.

9. Monthly List of Russian Accessions, Library of Congress, February 1953, Unclassified.

VASILENKO, V.P., kand.ekon. nauk; PODOPLELOV, V.P., kand. ekon. nauk; KONOVALOV, D.A., nauchn. sotr.; KANEV, G.V., aspirant; KARNAUKHOVA, Ye.S., doktor ekon. nauk, otv.red.; BELOV, V.K., red.

[Potentialities for reducing costs in the agriculture of the Komi A.S.S.R.] Rezervy sokrashcheniia zatrat v sel'skom khoziaistve Komi ASSR. Moskva, Nauka, 1965. 178 p. (MIRA 18:10)

1. Akademiya nauk SSSR. Komi filial, Syktyvkar.

USSR/Metals - Aluminum Alloys, Smelting Jul 51

"Concerning Possible Changes in Melting Technology of the Silumin-Type Alloy," V. M. Belov Engr

"Litey Proizvod" No 7, pp 29, 30

Develops method for increasing the period of modification effect in aluminum-silicon alloys. Method employs a specially designed crucible, which permits keeping molten metal constantly under layer of modifying mixt, and makes possible continuous melting of modified aluminum-silicon alloys for permanent mold and conveyer casting.

196T101

BELOV, V. M.

Character of volumetric changes occurring on solidification of alloys having an aluminum-silicon base. V. M. Belov. *Liteinoe Proizvodstvo* 1953, No. 10, 21-4.—In a series of preliminary expts. the independence of shrinkage cavity from the gating practice and the effect of a high gas concn. on blow holes formation have been established. Then a no. of Al alloys contg. Si 10–13%; Si 8–10.5, Mg 0.17–0.30, and Mn 0.25–0.30%; Si Mg 0.20–0.40%; and Si 6–9 and Zn 10–14% were cast in the same sand molds and examd. for their shrinkage characteristics. The Al-Si alloy had a single shrinkage cavity; Mg-Mg and Si-Zn alloys showed a combination of a central cavity with scattered intercryst. pores; in the Mg alloy only pores could be found.

J. D. Gat

AUTHORS: Belov, V.M., Kazennov, S.A.

SOV/128-58-11-4/24

TITLE: Equipment for Die Casting of Steelwith the Use of a Vacuum (Oborudovaniye dlya lit'ya stali pod davleniyem s primeneniyem vakuuma)

PERIODICAL: Liteynoye proizvodstvo, 1958, Nr 11, pp 7-8 (USSR)

ABSTRACT: The elimination of air cavities in the die-casting of steel parts is only possible with the use of a vacuum. Information is presented on new designs of vacuum devices, including a machine with air elimination by a plunger and by the press-chamber top, which is free of metal. (Fig. 1) and a device of improved design where the press mould is placed in a vacuum chamber (Fig. 2). This vacuum device was used on the "Reed Prentice 1 1/2 G" machine.
There are 3 sets of diagrams.

1. Steel--Casting 2. Die casting--Equipment 3. Vacuum systems --Design

Card 1/1

BELOV, V.M.

Continuous-line methods of die casting. Lit. proizv. no.6:15-16 Je '60. (MIRA 13:8)
(Die casting) (Assembly-line methods)

BELOV, V.M.

Low-power voltage stabilizer on semiconducting elements.
Izv. SO AN SSSR no.6 Ser. tekh. nauk no.2:3-8 '64.
(MIRA 17:10)

1. Institut avtomatiki i elektrometrii Sibirskogo otdeleniya AN SSSR, Novosibirsk.

BELOV, V.M.; GASSEL', K.N.; KOGAN, M.G.

Critical rate of filling the mold with steel in die casting.
Lit. proizv. 5:11-13 My '64. (MIRA 18:3)

BELOV, V.M.

Putting the problem of schizophrenia on an organically changed basis. Zhur. nevr. i psikh. 65 no.10:1541-1546 '65.

(MIRA 18:10)

1. Kafedra psikhiatrii (zaveduyushchiy - prof. D.S.Ozeretskovskiy) Leningradskogo meditsinskogo instituta im. Pavlova.

ACC NR: AP6002008 SOURCE CODE: UR/0288/65/000/003/0012/0018

AUTHOR: Belov, V. M.

55

B

ORG: Institute of Automation and Electrometry, Siberian Branch, AN SSSR (Institut avtomatiki i elektrometrii Sibirskogo otdeleniya AN SSSR)

TITLE: Calculating the static characteristics of two-position voltage stabilizers

SOURCE: AN SSSR. Sibirskoye otdeleniye. Izvestiya. Seriya tekhnicheskikh nauk, no. 3, 1965, 12-18

TOPIC TAGS: voltage stabilizer, automatic control system , linear automatic control, electric relay

ABSTRACT: The two-position d-c voltage stabilizer is regarded as a relay-type automatic-control system consisting of a linear part and a relay element. The linear part is describable by a first-order differential equation; the relay element can be connected in series or in parallel with the linear element. The variation in the non-linearity of charge-discharge curves of the energy-storing capacitor is believed to be the principal cause of the output-voltage instability. As the frequency of functioning of the relay element is relatively low, the transistor involved in the stabilizer circuit

Card 1/2

UDC: 621.3.072.2

L 13368-66

ACC NR: AP6002008

0

is regarded as an inertialess element. Simple formulas for designing parallel and series stabilizers are developed. The series type is recommended for 10—15 v, 1—1.5 amp stabilizers. For heavier currents, stabilizers with an inductor as an energy-storing element are believed to be more suitable. Orig. art. has: 5 figures and 28 formulas.

SUB CODE: 09 / SUBM DATE: 24May65 / ORIG REF: 004 / OTH REF: 002

Card 2/2

L 07212-67

ACC NR: AP6026305 (N) SOURCE CODE: UR/0288/66/000/001/0096/0105

AUTHOR: Belov, V. M.; Klistorin, I. F.

24
B

ORG: Institute of Automation and Electrometry, Siberian Department, AN SSSR, Novosibirsk (Institut avtomatiki i elektrometrii Sibirskogo otdeleniya AN SSSR)

TITLE: Limiting values of output voltage pulsation of on-off constant voltage regulators

SOURCE: AN SSSR. Sibirskoye otdeleniya. Izvestiya. Seriya tekhnicheskikh nauk, no.1, 1966, 96-105

TOPIC TAGS: voltage stabilization, output voltage, voltage regulator

ABSTRACT: The effects of the time lag of the switching elements and of the presence of residual parameters (capacitance and inductance) of a capacitor connected in parallel with the load resistance on the magnitude of the output voltage pulsations of an on-off constant voltage regulator are discussed. The effect of these two factors is important since the latter impairs the minimization of the output voltage pulsations by decreasing the hysteresis bandwidth or by increasing the capacitance of a (preferably electrolytic) capacitor. It is shown that the limiting effect of the time lag of the switching elements on the limit values of the output voltage pulsations can be minimized if the threshold frequencies of the transistors employed greatly exceed the frequency of the self-oscillations of the regulator. By appropriate assembly, and using hf transistors and several parallel-connected capacitors of equal

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UDC: 621.3.072.2

L 07212-67

ACC NR: AP6026305

capacitance and very small residual inductances, it is possible to reduce the peak-to-peak amplitudes of the pulsations to values of the order of 10 mV. If the pulsations should not exceed about 0.1%, it is not advisable to design an on-off regulator for output voltages less than 10 V. Orig. art has: 21 formulas and 4 figures.

SUB CODE: 09/ SUBM DATE: 04Sep65/ ORIG REF: 007/ OTH REF: 001

Card 2/2

BELOV, V.N., inzh.

Remodeling oil well equipment. Mov. tekh. i pered. op. v stroi. 20 no.10:15-17 O '58. (MIRA 11:10)
(Oil wells--Equipment and supplies)

BELOV, V. N., Cand of Tech Sci — (diss) "Analysis of the Conditions of Drilling a Usable Shafts for Potash Mining at the Kamsk Deposits," Leningrad, 1959, 18 pp (Leningrad Mining Institute im G. V. Plekhanov) (KL, 5-60, 125)

BELOV, V.N., inzh.

Shaft sinking in Kama deposit potash mines by means of boring. Izv.vys.ucheb.zav.; gor.zhur. no.11:28-36 '58. (MIRA 12:8)

1. Leningradskiy gornyy institut.
(Kama Valley--Potash) (Shaft sinking)

BELOV, V.N.

ORLOVSKIY, A.V., professor; LYUTER, R.A., doktor tekhnicheskikh nauk; KAZOVSKIY, Ye.Ya., kandidat tekhnicheskikh nauk; YAKOBSON, El'mar, inzhener; ANTOPOL'SKIY, V.M., inzhener; PUKHOV, G.Ye., doktor tekhnicheskikh nauk; FYURSTENBERIN, A.I., inzhener; BERGER, A.Ya., professor (Leningrad); TSVERAVA, G.K., inzhener; KRAYNIY, K.I., inzhener (g.Kotovsk, Tambovskoy obl.); BELOV, V.N., inzhener (g.Ul'yanovsk).

Correspondence conference of readers of "Elektrichestvo." Elektrichestvo no.8:89-91 Ag '53. (MLRA 6:8)

1. Kiyevskiy politekhnicheskiy institut (for Orlovskiy). 2. Zavod "Elektrosila" (for Lyuter and Kazovskiy). 3. Estonkommunenergo (for Yakobson). 4. Saratovskiy industrial'nyy tekhnikum (for Antopol'skiy). 5. Tomskiy politekhnicheskiy institut imeni Kirova (for Pukhov). 6. Tikhvinskiy glinozemnyy zavod (for TSverava). (Electric engineering--Periodicals)

KOZHEVNIKOV, N.M., mayor meditsinskoy sluzhby; BELOV, V.N., polkovnik meditsinskoy sluzhby

Continuous action syringe. Voen.-med. zhur. no.9:62-63 S '55.
(SYRINGES) (MLRA 9:9)

BELOV, V.N.

Courses for industrial plant school managers. Neftianik 1 no.7:32 Jl '56. (MLRA 9:11)
(Technical education)

BELOV, V.N., prof.; DAYEV, N.A.; SKVORTSOVA, N.I.

Achievements in and prospects for the development of the industry of odorous substances. Zhur. VKHO 5 no.4:362-370 '60. (MIRA 13:12)

(Odorous substances)

BUZANOV, S.P., prof., doktor tekhn. nauk; BELOV, V.N., kand. tekhn. nauk (Tashkent); ISHIMBAYEV, V.I., kand. tekhn. nauk (Tashkent); TULYAGANOV, U.T., kand. tekhn. nauk (Tashkent)

Valuable book on station and junction layouts. Zhel. dor. transp. 46 no.10:92-93 O '64. (MIRA 17:11)

KHEYFITS, L.A.; SHULOV, L.M.; GOL'DOVSKIY, A.Ye.; BELOV, V.N.

New odorous substances based on norbornene. Trudy VNII NDV no.6:25-29 '63. (MIRA 17:4)

BELOV, V.N. (PROF.) DECEASED 1964

C.'63

Organic Chemistry
Synthetic and Natural Substances

LASKINA, Ye.D.; DEVITSKAYA, T.A.; BELOV, V.N.

Synthesis of 3-hydroxy-4-ethoxy-1-propenylbenzene ("vanitrop") from pyrocatechol. Trudy VNIISNDV no.6:31-37 '63. (MIRA 17:4)

BRATUS, I.N.; FILATOVA, I.A.; VORONIN, V.G.; BELOV, V.N.

Improvement of the synthesis of salicylaldehyde. Trudy VNIISNDV no.6:45-48 '63. (MIRA 17:4)

VOYTSEKHOVSKAYA, A.L.; BELOV, V.N.

Synthesis of γ,δ-substituted δ-lactones. Report No.1. Trudy VNIISNDV no.6:62-66 '63.

Synthesis of γ,δ-substituted δ-lactones. Report No.2. Ibid.:66-73 (MIRA 17:4)