

MIRUMYAN, L.N., kandidat meditsinskikh nauk; KAPICHNIKOVA, L.G., kandidat  
meditsinskikh nauk; SKLYAR, I.B., inzhener

Efficient bandage for inguinal herniae. Ortop., travm. protez. 17  
no.5:69 S-0 '56. (MLRA 10:1)

1. Iz TSentral'nogo nauchno-issledovatel'skogo instituta proteziro-  
vaniya i protezostroyeniya (dir. - prof. B.P.Popov)  
(BANDAGES AND BANDAGING) (HERNIA)

~~MIRUMYAN~~, L.N., doktor meditsinskikh nauk

Pathoanatomical changes in nonknitting fractures of the femur. Ortop.  
travm. i protes. 17 no.6:112 N-D '56. (MLHA 10:2)

1. Iz Tsentral'nogo nauchno-issledovatel'skogo instituta protezirovaniya i protezostroyeniya (direktor - professor B.P.Popov) Ministerstva sotsial'nogo obespecheniya RSFSR.  
(FEMUR--FRACTURE)

MIRUMYAN, L.N., doktor med.nauk; BOLKHOVITIN, S.V., starshiy inzhener.

New type prosthesis for short leg stump. Ortop., travm. protes.  
19 no.1:61-62 Ja-F '58. (MIRA 11:4)

1. Iz TSentral'nogo nauchno-issledovatel'skogo instituta protezi-  
rovaniya i protezostroyeniya Ministerstva sotsial'nogo obespecheniya  
RSFSR (dir. - prof. B.P.Popov)  
(ARTIFICIAL LIMB  
for short leg stump (Rus))

GOMBERG, A.Ye., insh; MIRUMYAN, M.M., insh

Adjusting the KZR-1 protection assembly for rotors of synchronous  
machines. Elek.sta. 29 no.9:80-81 S '58. (MIRA 11:11)  
(Electric machinery. Synchronous)

MAHVELYAN, M.G.; GRIGORYAN, G.O.; GAZARYAN, S.A.; POPYAN, G.S.; GRIGORYAN, N.M.  
MIRUMYAN, R.L.

Simultaneous trapping of sulfur dioxide and nitric oxide of low concentrations by alkalis and carbonates. Report No. 4: Adsorption by magnesium hydroxide. Izv. AN Arm. SSR Khim. nauki 13 no.2/3:101-106 '60.  
(MIRA 13:10)

1. Institut khimii Sovharkhoza ArmSSR.  
(Sulfur dioxide) (Nitrogen oxide) (Magnesium hydroxide)

SOV/51-7-2-29/34

AUTHOR: Kirumyants, S.O.

TITLE: On the Problem of the Effect of Light Gases on the Absorption by Vapours of Aromatic Compounds (K voprosu o deystvii legkikh gazov na pogloshcheniye parov aromaticheskikh soyedineniy)

PERIODICAL: Optika i spektroskopiya, 1959, Vol 7, Nr 2, pp 275-276 (USSR)

ABSTRACT: In 1945 Neporent (Ref 1) discovered that the intensity of absorption by *p*-naphthylamine vapours decreases when light gases are added to these vapours. The present paper describes an extension of Neporent's work. The effect of all inert gases and of diatomic gases H<sub>2</sub>, D<sub>2</sub> and N<sub>2</sub> on the absorption by vapours of 3-dimethylamino-6-aminophthalimide was studied. A luminescent method, used earlier by Neporent, was employed. Figs 1 and 2 show the results of measurements with the ordinates representing the relative intensities ( $F_z/F_0$ ) of fluorescence of 3-dimethylamino-6-aminophthalimide vapours;  $F_0$  and  $F_z$  are the intensities of fluorescence in the absence and in the presence of a foreign gas. The abscissae of Figs 1 and 2 give  $Z$  which is the number of collisions per second of the vapour molecule with molecules of a foreign gas. The vapour pressure was  $5.4 \times 10^{-3}$  mm Hg. The experiments were carried out at  $T = 528^\circ\text{K}$ . The results shown in Figs 1 and 2 agree with Neporent's data. In the case of inert gases the limiting magnitude of fluorescence

Card 1/2

On the Problem of the Effect of Light Gases on the Absorption by Vapours of Aromatic  
Compounds

SOV/51-7-2-29/34

(absorption) weakening  $[1 - (F_{00}/F_0)]$  is proportional to the mean relative velocity of colliding molecules, which in its turn is proportional to the reciprocal of the square root of the reduced mass of the colliding molecules. This is illustrated by the continuous line in Fig 3. For diatomic gases H<sub>2</sub>, D<sub>2</sub> and N<sub>2</sub> for which the collisions and their result depend not only on the mean relative velocity of the colliding molecules but also on other properties of these molecules, a non-linear curve (shown dashed in Fig 3) is obtained. Acknowledgment is made to B.S. Neporent who directed this work. There are 3 figures and 3 Soviet references.

SUBMITTED: March 3, 1959

Card 2/2

AUTHORS:

Neporent, B.S. and Mirumyants, S.O.

S/051/60/008/005/007/027  
E201/E491

TITLE:

A Spectroscopic Investigation of the Processes of Transformation of the Vibrational Energy of Complex Molecules During Collisions. I. Determination of the Amount of Energy Transfer and the Collision Efficiency

PERIODICAL:

Optika i spektroskopiya, 1960, Vol.8, No.5, pp.635-642

TEXT:

Stabilization of excited complex molecules, i.e. decrease of the probability of radiationless transitions by transfer of the excess vibrational energy during collisions with foreign particles, was used by Neporent to explain the intensification of fluorescence of aromatic vapours on addition of such foreign gases which have no quenching effect (Ref.1). In later work Neporent (Ref.2) suggested that the intensification of fluorescence by foreign gases can be used in studies of energy transfer in molecular collisions. The results reported in these two papers and in other work (Ref.3 to 9) are reviewed in some detail (Fig.1 to 3). It is shown that in studies of the processes of vibrational energy transformations during collisions of complex excited molecules with foreign molecules, it is necessary to allow for the energy exchange both

✓B



S/051/60/008/005/007/027  
E201/E491

A Spectroscopic Investigation of the Processes of Transformation of  
the Vibrational Energy of Complex Molecules During Collisions.  
I. Determination of the Amount of Energy Transfer and the Collision  
Efficiency

with the foreign molecules and with the translational and rotational  
degrees of freedom of the excited molecules themselves. An improved  
expression was obtained for the accommodation coefficient and it was  
applied to the reported data (Ref. 1 to 9); the results are given  
in Tables 1 to 3. The paper ends with a short discussion of the  
equations and numerical results reported here. There are  
3 figures, 4 tables and 20 references: 8 Soviet 10 English and  
2 German.

SUBMITTED: July 22, 1959

Card 2/2

5 4100  
24.3500

S/051/60/008/06/007/024  
E201/E691

AUTHORS: Mirumants, S.O. and Neporent, B.S.

TITLE: A Spectroscopic Investigation of the Processes of the Vibrational Energy Transformations During Collisions of Complex Molecules. II. The Effect of Foreign Gases on the Fluorescence Yield of 3-Dimethylamine-6-aminophthalimide

PERIODICAL: Optika i spektroskopiya, 1960, Vol 8, Nr 6, pp 787-798 (USSR)

ABSTRACT: A large number of foreign gases (He, Ne, Ar, Kr, Xe, H<sub>2</sub>, D<sub>2</sub>, N<sub>2</sub>, CO, H<sub>2</sub>O, D<sub>2</sub>O, NH<sub>3</sub>, C<sub>6</sub>H<sub>12</sub>) was used to study their effect on the fluorescence yield of 3-dimethylamine-6-aminophthalimide vapour excited at four wavelengths (492, 436, 405, 365 mμ) from an SVDSH mercury lamp. The measurements were carried out with a photoelectric set-up, similar to that described earlier (Ref 2). The total intensity of fluorescence was measured, since special experiments showed that the fluorescence spectrum of 3-dimethylamine-6-aminophthalimide (Fig 1) is not affected even at isopentane pressures of 300 mm Hg. The vapour pressure of the foreign gases was kept at  $5.4 \times 10^{-3}$  mm Hg. The temperature in all tests was kept constant at 528°K. The results are shown in Figs 2-11 and in a table on p 793. From the experimental

Card 1/2

80546

S/051/60/008/08/007/024  
E201/E691

A Spectroscopic Investigation of the Processes of the Vibrational Energy Transformations During Collisions of Complex Molecules. II. The Effect of Foreign Gases on the Fluorescence Yield of 3-Dimethylamino-6-aminophthalimide.

values of intensification or weakening of fluorescence the authors deduced for each foreign-gas molecule the amount of vibrational energy exchanged in a single collision with an excited molecule of 3-dimethylamino-6-aminophthalimide. For all cases the authors found the accommodation coefficient which gives the efficiency of collisions in the sense of the amount of energy exchanged. It was found that such collision efficiency depends mainly on the Van der Waals interaction constants, i.e. on the durations of collisions. It was also found that transformation of energy of foreign-gas molecules into the vibrational energy of 3-dimethylamino-6-aminophthalimide molecules is much less efficient than the reverse process. There are 11 figures, 1 table and 36 references, of which 19 are Soviet, 13 English, 2 German and 2 translations into Russian.

SUBMITTED: July 22, 1959

Card 2/2

MIRUMYANTS, S.O.; MEPORENT, B.S.

Effect of contaminant gases on the intensity of the  
electron absorption of 3-dimethylamino-6-aminophthalimide  
vapors. Opt.1 spektr. 9 no.1:7-15 J1 '60.

(Phthalimide--Spectra)

(MIRA 13:7)

*12/20/60*

AUTHORS: Bakhshiyev, N.G. and Mirumyants, S.O.

S/051/60/009/01/02E/031  
E201/B691

TITLE: Eighth Conference on Luminescence (Molecular Luminescence and Luminescent Analysis)

PERIODICAL: Optika i spektroskopiya, 1960, Vol 9, Nr 1, pp 124-127 (USSR)

ABSTRACT: The Eighth Conference on Luminescence was convened by the Scientific Council on Luminescence, Academy of Sciences of the Byelorussian SSR and by the Physics Institute of the USSR Academy of Sciences. It was held on October 19-24, 1959, in Minsk. The Conference was divided into two sections: (1) molecular luminescence and (2) luminescent analysis. About 120 papers were read at the Conference, the majority of them belonged to the first section. Papers were read by: V.L. Yermolayev and A.N. Terenin (internal transfer of energy in triplet levels of complex molecules), V.L. Yermolayev, I.P. Kotlyar and K.K. Svitashov (probability of internal transition from fluorescent to phosphorescent levels in naphthalene derivatives), V.A. Borgman, I.A. Zhmyreva, V.V. Zelinskiy

Card 1/6

S/051/60/009/01/026/07:  
E201/B691

**Eighth Conference on Luminescence (Molecular Luminescence and Luminescent Analysis)**

and V.P. Kolobkov (internal transitions in phthalimide derivatives), S.O. Mirumyants and B.S. Neporent (transformation of vibrational energy of excited complex molecules on collision with foreign molecules), V.P. Klochkov (intermolecular interactions of complex organic molecules in the gaseous phase), N.A. Borisovich and V.V. Gruzinskiy (electronic spectra of anthraquinone vapours and solutions), N.A. Borisovich and V.A. Tolkahev (temperature dependence of the fluorescence yield of complex-molecule vapours), B.Ya. Svechnikov, P.I. Kudryashov, V.I. Shirokov and L.A. Limareva (energy migration, concentration depolarization of luminescence of organic solutions, sensitized fluorescence of solutions), Yu.A. Kurskiy and A.S. Selivanenko (theory of impurity quenching of luminescence in solutions), V.L. Levshin, Ye.G. Baranova and L.V. Krotova (transfer of excitation energy to associates in luminescing solutions of dyes and nature of binding forces in associates), L.V. Levshin and V.A. Bocharova (concentration effects in organic solutions), A.N. Terenin and A.V. Shablya (detection ✓

Card 2/6

S/051/60/009/01/028/071  
E201/E691

Eighth Conference on Luminescence (Molecular Luminescence and Luminescent Analysis)

of phototransfer of protons using luminescence spectra),  
G.P. Gurinovich, A.M. Sarzhevskiy and A.N. Sevchenko (polarization  
of luminescence of complex molecules in liquid and solid solutions),  
E.V. Shpol'skiy and L.A. Klimova (new data on spectra of aromatic  
hydrocarbons at 20°K), D.N. Shigoria, N.A. Shcheglov, N.S. Dokunikhin  
and R.N. Nurmukhammadov (low temperature line spectra of luminescence  
of anthraquinone halides, thioindigo and its derivatives),  
T.N. Bolotnikova (spectra of certain aromatic aldehydes and ketones  
at low temperatures), R.I. Personova (luminescence and absorption  
spectra of perylene at low temperatures), A.Ya. Khasina (spectroscopy  
of certain pyrene derivatives in frozen solutions), S.G. Bogomolov,  
F.D. Ponomova and L.I. Kolosova (spectrum of 3,4-benzopyrene dissolved  
in normal hydrocarbons), A.N. Faydysh, M.T. Shpak, Ye.F. Sheka,  
V.I. Gribkov, N.D. Zhevandrov, V.M. Agranovich, Yu.V. Konobeyev,  
V.L. Broude, V.S. Medvedev, Ya.Ya. Kirs, A.I. Laysaar, M.I. Belyy  
and B.F. Rud'ko (luminescence and other properties of molecular  
crystals and solid solutions), V.M. Agranovich (theory of excitons

Card 3/6

S/051/60/009/01/02E/031  
E001 B691

Eighth Conference on Luminescence (Molecular Luminescence and Luminescent Analysis)

in molecular crystals), Z.A. Chishikova, I.M. Rozman, Yu.V. Naboykina, V.K. Dobrokhotova, V.V. Uglanova, Sh.D. Khanmagametova, N.D. Zhevandrov and V.I. Gribkov (scintillation properties of organic compounds and luminescence of crystals subjected to hard radiations), M.T. Shpak and Ye.P. Sheka (luminescence of crystalline naphthalene containing small amounts of impurities), Ch.B. Lushchik, N.Ye. Lushchik, G.G. Liyd' and K.K. Shvarts (electronic-vibrational processes in luminescence centres of solid and liquid solutions of hydrogen-like ions), A.S. Cherkasov (experimental results on the effect of solvents and temperature on fluorescence of acetylanthracenes), N.G. Bakshiyev (dielectric effects and properties of electronic spectra of multiatomic organic molecules in solutions), I.A. Zhmyreva, V.V. Zelinskiy, V.P. Kolobkov, A.A. Kochemirovskiy and I.I. Reznikova (fluorescence spectra of aromatic compounds in a wide range of solvents), L.G. Fikulik and A.N. Sevchanko (temperature dependences of the quantum yield of fluorescence of certain phthalimides in various solvents),

Card 4/6



S/051/60/009/01/026/031  
B201/B691

Eighth Conference on Luminescence (Molecular Luminescence and Luminescent Analysis)

L.G. Pikulik and M.A. Solomakho (effect of temperature on electronic spectra of complex molecules in solutions). G.M. Kislyak (phosphorescence of certain solvents), B.I. Stepanov et al. (theory of secondary absorption and luminescence, comparison of classical and quantum mechanical treatments of interaction of light with matter and calculation of band profiles of complex molecules). M.A. Yel'yashevich (interaction of electronic and vibrational motion in complex molecules), S.I. Kubarev (general quantum-mechanical theory of spectra of complex molecules), K.K. Rebane, A.A. Rentel' and O.I. Sil'd (probabilities of electron-vibrational transitions of an oscillator; V.M. Agramovich, B.S. Neporent et al. took part in discussion of this paper), M.A. Alentsev (absorption and luminescence spectra of erythrosime), D.S. Shigorin et al., Yu.V. Naboykin, B.A. Zadorozhnyy and L.A. Ogurtsova (spectroscopic studies of hydrogen bonds), L.D. Derkacheva (effect of concentration of hydrogen ions on fluorescence of naphthalene derivatives), Ye.A. Bozhevol'nov, V.V. Zelinskiy et al. (de-activation of

Card 5/6

S/051/60/009/01/026/071  
E.01/8891

Eighth Conference on Luminescence (Molecular Luminescence and Luminescent Analysis)

excited states of complex organic molecules), T.M. Bamber and A.S. Cherkasov (effect of fluorescence quenching on quantum yields of photochemical reactions of some anthracene derivatives), V.S. Adamov and L.T. Kantardzhyan (kinetics of monomolecular luminescence processes), Ye.V. Anufriyeva and A.D. Zaytseva (phosphorescence of polymers during vitrification), T.N. Godnev, R.V. Yefremova, N.P. Ivanov and L.A. Kravtsov (spectroscopic studies of chlorophyll), A.A. Krasnovskiy and S.S. Litvin (luminescence of leaves and model systems). Some papers discussed luminescence of uranyl compounds. Papers read at four sessions of the second section dealt with quantitative and qualitative determination of the amounts of certain elements and organic compounds in mixtures of various kinds; development of new methods and apparatus for analytic purposes, application of luminescent analysis in biology, medicine, technology and agriculture. Proceedings of the second section of the Conference will be published by the Academy of Sciences, Byelorussian SSR

Card 6/6

81278

S/048/60/024/05/04/009  
B006/B017

24.3500

AUTHORS: Mirumyants, S. O., Neporent, B. S.

TITLE: Spectroscopic Investigation of Vibrational Energy Transfer  
in Interactions of Complex Molecules 21

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1960,  
Vol. 24, No. 5, pp. 514-515

TEXT: The present article is an abridged reproduction of a lecture delivered on the occasion of the Eighth Conference on Luminescence (Minsk, October 19-24, 1959). The authors investigated the transfer of vibrational energy in both directions (absorption and release by excited molecules) by means of a method which is based on the investigation of the dependence of the fluorescence yield of vapors of aromatic compounds on the pressure of foreign gases. An intensification of fluorescence 21 corresponds to a stabilization and a weakening to a labilization of the excited molecules due to absorption or release of vibrational energy in collisions. The stabilization of excited molecules of 3-di ethylamino-6-aminophthalimide in collisions with molecules of foreign gases was studied

Card 1/3

4

81278

Spectroscopic Investigation of Vibrational Energy Transfer in Interactions of Complex Molecules

S/O48/60/024/05/04/009  
B006/B017

with regard to its effect on the fluorescence yield of the vapors of the matter investigated on excitation of various wavelengths in a large range of the spectrum. The investigations were made for the following foreign gases: He, Ne, Ar, Kr, Xe; H<sub>2</sub>, D<sub>2</sub>, N<sub>2</sub>, CO, and H<sub>2</sub>O, D<sub>2</sub>O, NH<sub>3</sub>, and C<sub>5</sub>H<sub>12</sub>. The mean vibrational energy transferred to or from the complex molecule per collision event with a foreign-gas molecule was determined. It was observed that the mean vibrational energy released by an excited 3-dimethylamino-6-aminophthalimide molecule increases with the mass and the complex structure of the foreign gas. However, this dependence cannot be formulated uniformly. A monotonic dependence could be observed only in monatomic gases; however, also in this case a considerable deviation from the theoretical dependence was observed, which had been computed according to a conception of elastic collisions of balls. This shows the inadequateness of this model. It is assumed that these deviations can be explained by the fact that an energy exchange takes place not only among the molecules but also between the internal and external degrees of

Card 2/3

Spectroscopic Investigation of Vibrational Energy Transfer in Interactions of Complex Molecules

R1278

S/048/60/024/05/04/009  
B006/B017

freedom of the excited molecule of the matter investigated. To study this phenomenon, the accomodation coefficient was computed by employing a formula deduced by the authors in Ref. 4 and all degrees of freedom were taken into account for the energy transfer. It was found that the efficiency of collisions with respect to energy transfer depends monotonically on the van der Waals' interaction constants of the molecules of foreign gases. An estimate of the part played by rotational and vibrational degrees of freedom of diatomic and polyatomic molecules of the foreign gas in energy transformation was given. It was experimentally found that the reverse process (energy transformation of the foreign gases into oscillation energy of the molecules investigated) is much less probable than the direct process. There are 4 Soviet references.

Card 3/3

4

FIRBYANT, ...

Can: Inve-Data 101 - (dis) "Electrostatic interaction  
intermolecular interaction and energy transfer for  
intermolecular collision in the gas phase." *Journal of  
Chemical Physics*, 1961, 35, 16. In: *International Conference on  
Atomic and Molecular Physics*, 1961, 1, 16. (1961, 1, 16)  
Triv. Inst. A. A. ... (1961, 1, 16)

AYBULATOVA, V.T., inzh.; VESELOVA, N.I., inzh.; MIRUSHINA, L.F., inzh.;  
OSMOLOVSKAYA, T.A., inzh.; CHAYKOVSKAYA, A.V., inzh.

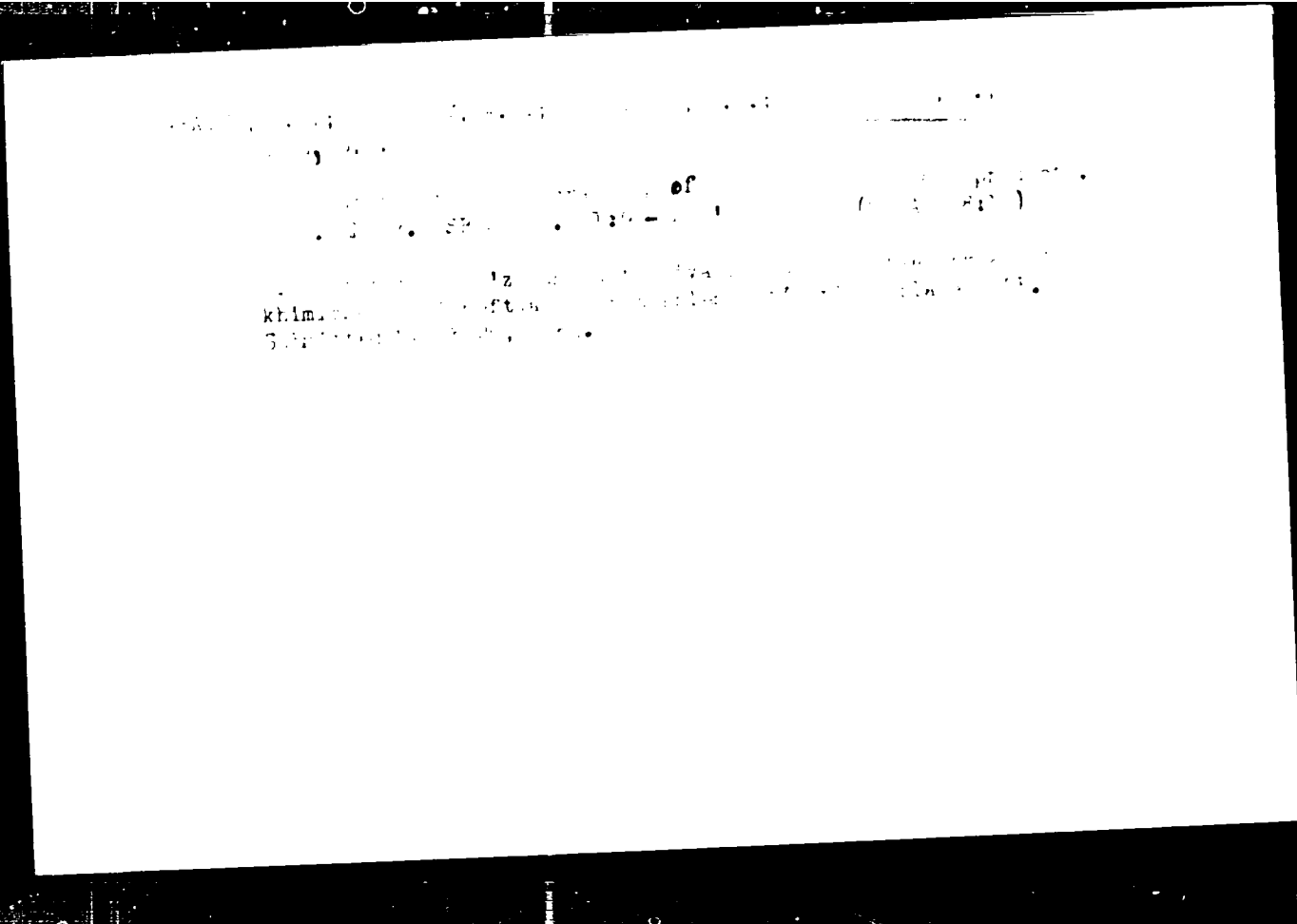
Elimination of unproductive expenditures is an important potential for lowering costs. Transp. stroi. 12 no.3:38-40 Mr '62.  
(MIRA 16:11)

MIRUSHINA, L.F.

Use efficiently fixed assets and working capital. Transl.  
stroitel'stvo no.10:35-36 0 '65. (MIRA 18:1.)

1. Staryiy inzh. Vsesoyuznogo nauchno-issledovatel'skogo  
instituta transportnogo stroitel'stva Ministerstva trans-  
portnogo stroitel'stva.





MIRUTENKO, N.I.

Introducing the PLZh-2 semiautomatic flat-fang flat and glove  
knitter. Biul. tekhn.-ekon. inform. Gos. nauch.-issled. tsentr.  
1 tekhn. inform. 18 no.2:50-51 F. U. S. S. R. 1974

MIRUTENKO, O.S., inzh.; TRUKHAN, G.L., kand. tekhn. nauk, dotsent

Analyzing the methods of pattern making in series. Izv. vys. ucheb. zav.; tekhn. leg. prom. no.4:129-139 '63. (MIRA 16:10)

1. Kiyevskiy tekhnologicheskii institut legkoy promyshlennosti. Rekomendovana kafedroy tekhnologii shveyynogo proizvodstva.

L 27870-65 ENT(m) DIAAP GS

S/0000/64/000/000/0062/0079

ACCESSION NR: AT5005623

AUTHOR: Mitukenko, V. I.

TITLE: The thermal effect of SHF on animals and some problems of SHF dosimetry

SOURCE: An UkrSSR. Institut fiziologii. Biologicheskoya deystviye ul'trazvuka i sverkhvysokochastotnykh elektromagnitnykh kolebaniy (Biological effect of ultrasound and superhigh frequency electromagnetic oscillations). Kiev, Naukova dumka, 1964, 62-79

TOPIC TAGS: SHF; biological affect, rat, dosimetry

ABSTRACT: In view of the paucity of published materials on SHF dosimetry in biological experimentation, the author studied methods for measuring 3-cm SHF fields in animal experiments. Special attention was given to methods for quantitative determination of incident and absorbed energy. These methods make it possible to establish threshold values for nonthermal SHF intensities and elucidate the thermal mechanism of action of SHF on animals under conditions of whole body or local irradiation. Besides biological objects, dummies were used to study SHF energy absorption dynamics. This abstract will deal primarily with that portion of the article devoted to nonthermal threshold determinations. To measure nonthermal in-

Card 1/3

L 27870-65

ACCESSION NR: AT5005623

0

tensity values of SHF in the 3-cm range, a waveguide assembly similar to that used by A. S. Presman was used. It was possible to determine energy absorption in a living subject with 5% accuracy. In this study, rats were subjected to 28 exposures of irradiation. During irradiation, tissue temperatures were taken with MT-54 thermistors connected to a chart-recording potentiometer. The sensitivity of this assembly was  $\pm 0.05^{\circ}\text{C}$  which was satisfactory considering normal temperature fluctuations in the animals. A group of 3 was exposed to an SHF field of  $15 \text{ mw/cm}^2$ , to establish a definite thermal effect; 3 more were exposed to a field of 7.5 to  $3.5 \text{ mw/cm}^2$ ; and 10 rats were exposed to a field of  $1.5\text{--}0.8 \text{ mw/cm}^2$ . These tests showed that SHF in the 3-cm range produced no thermal effect at field intensities of  $1.5\text{--}0.8 \text{ mw/cm}^2$ . The criterion for the establishment of the nonthermal threshold was the absence of heating in the subcutaneous layers (at a depth of  $0.8 \text{ cm}$ ), where SHF fields normally induce the greatest heating. The threshold  $1.5$  to value established applies only to 3-cm fields. The author disagrees with A. S. Presman's theory of the mechanism of SHF absorption that 90% of the absorption of 3-cm field energy occurs as dipole molecule oscillation, due to the high water content of living tissues. Since dipole oscillation is characteristic of pure water, while tissue water holds salts and other substances in solution, the author feels that energy absorption in tissue would take the form of processes more complex than dipole oscillation alone. General conclusions of the entire article are

Card 2/3

L 27870-65

ACCESSION NR: AT5005623

0  
that the thermal thresholds of SHF fields are influenced by wavelength, tissue depth of energy absorption, natural thermoregulatory mechanism, and, the area, anatomical features, and hemodynamics of the irradiated portion of the organism. The magnitude of SHF thermal effect during whole body irradiation is directly proportional to the incident energy. The thermal effect of SHF increases linearly with time during short exposures (1 to 3 min), and can be determined as a function of the quantity of absorbed energy. In longer exposures (3 to 5 min), the magnitude of the thermal effect and the distribution of heat in tissues and organs is a function of thermoregulatory mechanisms and blood circulation. Orig. art. has: 2 figures. [CD]

ASSOCIATION: none

SUBMITTED: 15Sept64

ENCL: 00

SUB CODE: LS, EC

NO REF SOV: 033

OTHER: 027

ATD PRESS: 3192

Card 3/3

MIRUTENKO, V.I. [Myrutenko, V.I.]

Study of the local thermal action of 3 cm electromagnetic waves on animals. Fiziol. zhur. [Ukr.] 8 no.3:382-389 My-Je '62. (MIRA 15:6)

1. Laboratoriya biofiziki Instituta fiziologii im. A.A. Bogomol'tsa AN USSR, Kiyev.

(ELECTROMAGNETIC WAVES—PHYSIOLOGICAL EFFECT)

MIRUTKO, S.M.

Machine for unloading loose materials. Ogneupory 20 no.4:  
179-180 '55. (MIRA 8:9)

1. Zavod im. Dzerzhinskogo  
(Cranes, derricks, etc.)



**MIJUTKO, S.M.**

The loading of refractory products by fork lift trucks without wooden  
trays. Ogneupory 21 no.8:373-376 '56. (NLRA 10:2)  
(Firebrick) (Fork lift trucks)

AUTHORS: Mironov, S. M., Stoyanov, P. I. SOV. METALS 7-10, 1956

TITLE: Cast-iron Bottom Plates for Edge Mills (Podoyznye plity begunov iz chuguna)

PERIODICAL: Ogneupory, 1956, No. 7, pp. 528 - 529 (USSR)

ABSTRACT: Manganese steel (G13), is usually used for the production of parts of milling machines. The dials works imeni Dzerzhinskiy produced the bottom plates of mixers and edge mills from cast iron of the following composition (in per cent): C 2.4-2.7; Si 1.0-2.0; Mn 0.5; Cr 1.3-1.5; Ni 0.5-0.7. The melting of the low-carbon cast iron was carried out in the converter working with an oxygen blower. In order to obtain the required content of chromium and nickel the cupola furnace charge was prepared with 80% of cast iron of the Khalilov works. After blowing an addition of 1 kg ferromanganese and 3 kg of 60% ferro-silicon was added per 1 t of metal in the converter. The plates were cast in sand molds with the working surface downward, the casting temperature was from 1350 to 1380°. The plates reached a hardness of from 450 to 500 HB.

Card 1/2

Cast-Iron Bottom Plates for Edge Mills

SOV, 131-52-7-10/14

The strength of these plates was equal to those produced from manganese steel; the costs, however, were only half as compared to the others

ASSOCIATION: Dinasovyy zavod im Dzerzhinskogo (Dinas Works im-af Dzerzhinskiy)

1. Machine--Production    Pearlite--Application    Pearlite  
--Properties    4. Pearlite--Processing

Card 2/2

15(2)

AUTHOR:

Mirutko, S. M.

SOV, 1959-3-12, 18

TITLE:

A Machine for the Transportation of Underframes With Bricks  
(Ustroystvo dlya transportirovki poddonov s kirpichom)

PERIODICAL:

Ogneupory, 1959. Nr 3, pp 139-140 (USSR)

ABSTRACT:

In order to save labor in the transportation of bricks by means of an electric traveling crane S. S. Bovkun suggested automation-tongs (Figs 1 and 2) which were produced by the plant itself and which are now successfully operating in the brick store. Thus 4 transport workers were saved whose task it was to connect and disconnect the underframes with bricks. Construction and method of operation of the tongs are described on the figures.-There are 2 figures.

ASSOCIATION:

Dinasovyy zavod im. Dzerzhinskogo  
(Dinas Plant imeni Dzerzhinskiy)

Card 1/1

BERKHOV, R. B.; ISLAMOY, A. A.; MIRVAKHIDOV, M. M.

"Resonance Scattering of Gamma Rays on Nuclei  $Si^{28}$ ,  $Zn^{66}$ ,  $Ce^{140}$ ."

report submitted for All-Union Conf on Nuclear Spectroscopy, Tbilisi,  
14-22 Feb 64.

IYaF, AN UzSSR (Inst Nuclear Physics, AS UzSSR)

MIRVELOVA, T. B.

"Problems of Roentgenological Changes in Cases of Clinically Induced Brucellosis,"  
by T. B. Mirvelova, Roentgenologist, Inst. Experimental and Clinical Surgery & Hematology,  
Acad. Sci., Georgian SSR.

Khirurgiya, No. 1, 1959.

MIRVIS, D.A., kand.sel'skokhozyaystvennykh nauk

Practices used in cultivating lupine for seed in western White  
Russia. Zemledelie 23 no.4:62-65 Ap '61. (MIRA 14:3)

1. Ganusovskaya sel'skokhozyaystvennaya opytnaya stantsiya.  
(Lupine) (Tillage)

MIRVIS, D.A., kand. sel'skokhoz. nauk

Cultivated pastures in western White Russia. Zemledelie 27 no.9:44-47  
S 1965. (MIRA 18 10)

1. Ganusovskay. selektsionnaya i vyvnyaya stantsiya po sakhar'noj  
svekle.



SECRET, Vol. 1, p. 1.

SECRET

GORLOV, A.M., kand.tekhn.nauk; MIRVIS, Ya.G., inzh.; UKOLOV, V.N., inzh.

Automating the design of reinforced concrete beams. inzh.stroi.  
4: no.2:10-13 '65. (MIRA 18:4)

1. Gosudarstvennyy institut tipovogo i eksperimental'nogo  
proyektirovaniya i tekhnicheskikh issledovaniy.

MIRYAKUBOVA, M.

Organic acids in corn and their transformations in seed  
germination and maturation. Uzb. biol. zhur. 7 no.5:  
40-45 '63. (MIFA 18:11)

1. Institut genetiki i fiziologii rasteniy AN UzSSR.

MIRYAKH'YAYEVA, B. M. Cand Med Sci -- "Age-related changes of the skin of various parts of the human body." Baku, 1960 (Azerbaijani State Med Inst im N. Narimanov). (KL, 1-61, 209)

-408-

USSR / Human and Animal Morphology (Normal and  
Pathological). Skins.

S-2

Abs Jour: Ref Zhur-Biol., No 10, 1958, 45640.

Author : Miryakhyeva, B. M.

Inst : Azerbaydzhan Medical Institute.

Title : Adult Skin Changes in Different Sections of the  
Human Body.

Orig Pub: Sb. tr. Azerb. med. in-ta, 1956, vyp. 3, 12-15.

Abstract: In seventy men, of different ages, the skin of the  
shoulders, backs, palms, soles, shinbones, the in-  
terior and exterior surfaces of the ribs were in-  
vestigated histologically. Senile changes are ex-  
pressed in the thickening of the epidermis, in  
the strong development of the horny layer, in the  
smoothing of the interpapillary excrescences, in  
the thinning of the papillary layer and in some

Card 1/2

SOLDATENKOV, S.V.; MIRYAKUBOVA, M.G.; MAZUROVA, T.A.; KALUGINA, Ye.V.

Sugar compounds with organic acids in dormant and germinating  
corn and wheat seeds. Fiziol. rast. 12 no.3:457-462 My-Je '65.  
(MIRA 18:10)

1. Kafedra fiziologii i biokhimi rasteniy Leningradskogo  
gosudarstvennogo universiteta imeni A.A. Zhdanova.

MIRYAN I F

68-7-14/16

AUTHORS: Miryan, I.F., Toptygin, L.A. and German, M.Ya. (Cand.Tech.Sc.)

TITLE: The Combustion of Wastes from Coal Beneficiation on Electricity Generating Stations (TETs). (Szhiganiye na TETs otkhodov ugleobogashcheniya).

PERIODICAL: Koks i Khimiya, 1957, Nr 7, pp. 53-58 (USSR)

ABSTRACT: The use of wastes from coal beneficiation plants of ash content about 60% (a mixture of separated rock and washing residues, Table 1) in boilers for generating electricity on the Bageyskiy Coke Oven Works was investigated. The installation is described in some detail (coal dust burner of TK3-Babkok type). Coke oven gas was used for a supplementary flame. The following problems were studied: 1) the use of waste product containing about 60% ash; 2) conditions necessary to obtain stable combustion of the mixture; 3) the influence of mineral matter and an increase in ash content on slagging in the fire box; 4) determination of optimum degree of fineness; 5) determination of the degree of wear of equipment and in particular of heating surfaces by ash, and 6) technico-economical indices of the use of waste as fuel. Experimental results are given in Table 2. It was found that the efficiency coefficient of the boiler somewhat decreased. Minimum amount of coke oven gas required was 450-600 n m<sup>3</sup>/hr

Card  
1/2

68-7-14/16

The Combustion of Wastes from Coal Beneficiation on Electricity  
Generating Stations (TETs).

(about 7-8% of the total heat input). During July 1955 - August 1956, the waste product was used as fuel, but only in April and May 1956 the proportion of waste rocks and washery waste was on the level required. The relevant data for this period are given in Tables 4-6 and a graph. Neither slagging nor excessive wear of heating surfaces and auxiliary equipment was observed. It is concluded that all the waste from the beneficiation of coals can be used as boiler fuel providing it is supplemented with coke oven gas flame. Further study of utilising the above waste but without supplementary gas flame is recommended. There are 6 tables and 1 graph.

ASSOCIATION: Bagley Coke Oven Works and Dnepropetrovsk Institute of Chemical Technology. (Bagleyskiy Koksokhimicheskiy Zavod i Dnepropetrovskiy Khimiko-Tekhnologicheskiy Institut)

AVAILABLE: Library of Congress  
Card 2/2



MIRYAN, I.F.

Coal chemicals makers of Bagley coke plants strive for technological progress. Koks i khim. no.1:47-50 '64. (MIRA 17:2)

1. Direktor Baglevakogo koksokhimicheskogo zavoda.

MIRYANOV, I.A., kandidat meditsinskikh nauk (Sevastopol')

Treatment of fractures of the lower articular end of the leg, without immobilization. Vest. khir. 76 no.11:83-88 '55. (MLRA 9:4)

(TIBIA, fract.

lower articular end, ther. without immobilization)

(FRACTURES,

tibia, lower articular end, ther. without immobilization)

MIRYANOV, I.A., podpolkovnik med. sluzhby, kand.med.nauk

Treatment of contusions and injuries of joint ligaments by novocaine  
blocks and early active movements. Voen.med.zhur. no.3:26-29

Mr '57.

(MIRA 11:3)

(LIGAMENTS, wounds and injuries,  
procaine block & movement ther. of inj. & contusions  
of joint ligaments (Rus)

(ANESTHESIA, REGIONAL, in var. dis.  
procaine block in inj. & contusions of joint ligaments (Rus)

L 9402-66 EWT(m)/ EWP(j) RM

ACC NR: AP6000326

SOURCE CODE: UR/0286/65/000/021/0014/0014

INVENTOR: Kravtsov, V. B. <sup>44,5</sup>; Moshchinskaya, N. K. <sup>44,5</sup>; Miryas, N. I. <sup>44,5</sup> 25

ORG: none

TITLE: Preparative method for 2-vinylanthracene. <sup>44,5</sup> Class 12, No. 175935 <sup>15</sup>

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 21, 1965, 14

TOPIC TAGS: vinylanthracene, dehydrogenation

ABSTRACT: An Author Certificate has been issued for a preparative method for 2-vinylanthracene. To widen the range of suitable raw materials and to simplify the process, 2-methyl-4-ethyl-diphenylmethane [sic] is dehydrogenated over activated-charcoal or manganese-oxide catalyst on pumice carrier at 600C. [SM]

SUB CODE: 07/ SUBM DATE: 29May63/ ATD PRESS: 4159

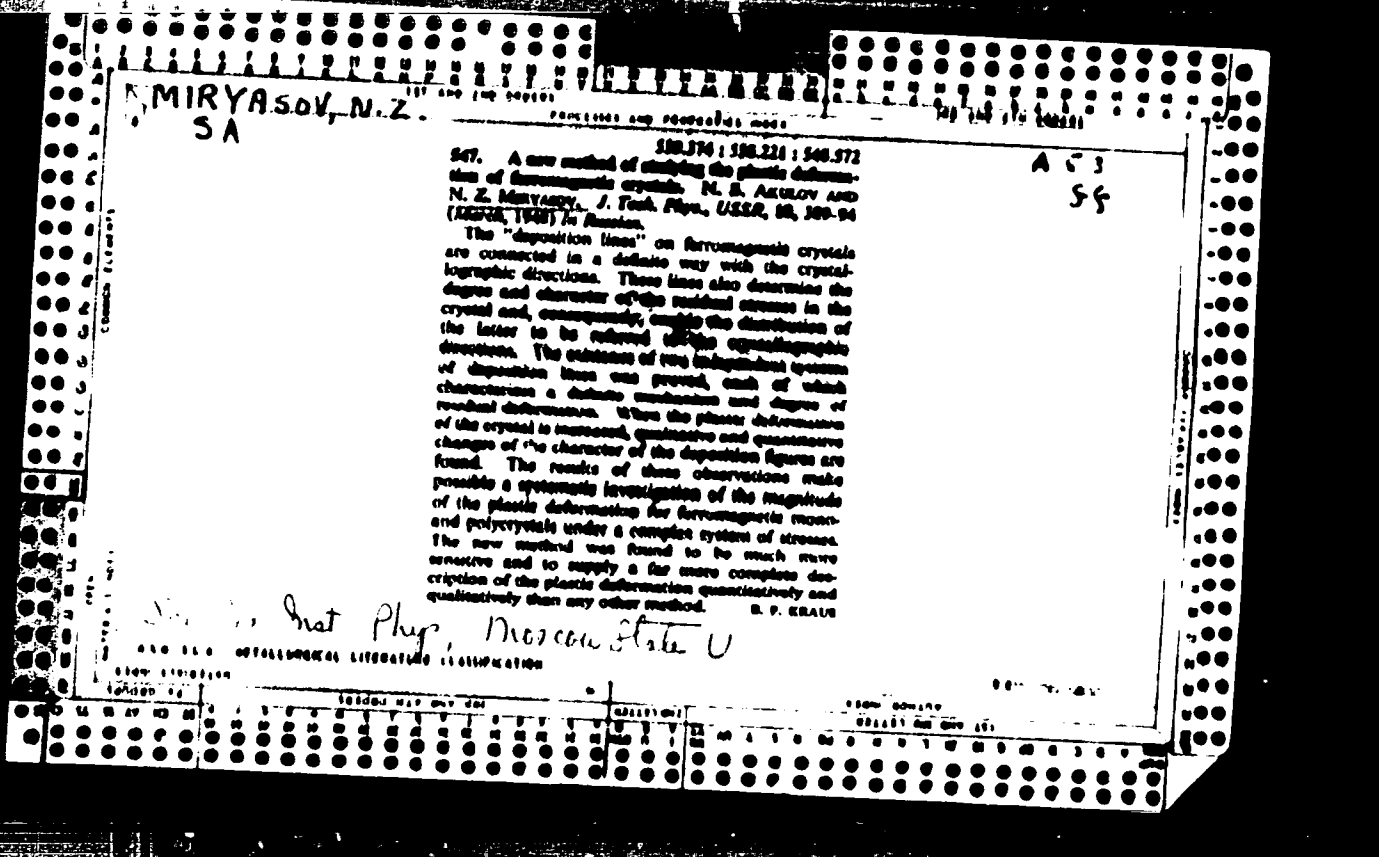
Card 111 rdo

UDC: 547.672.2.07

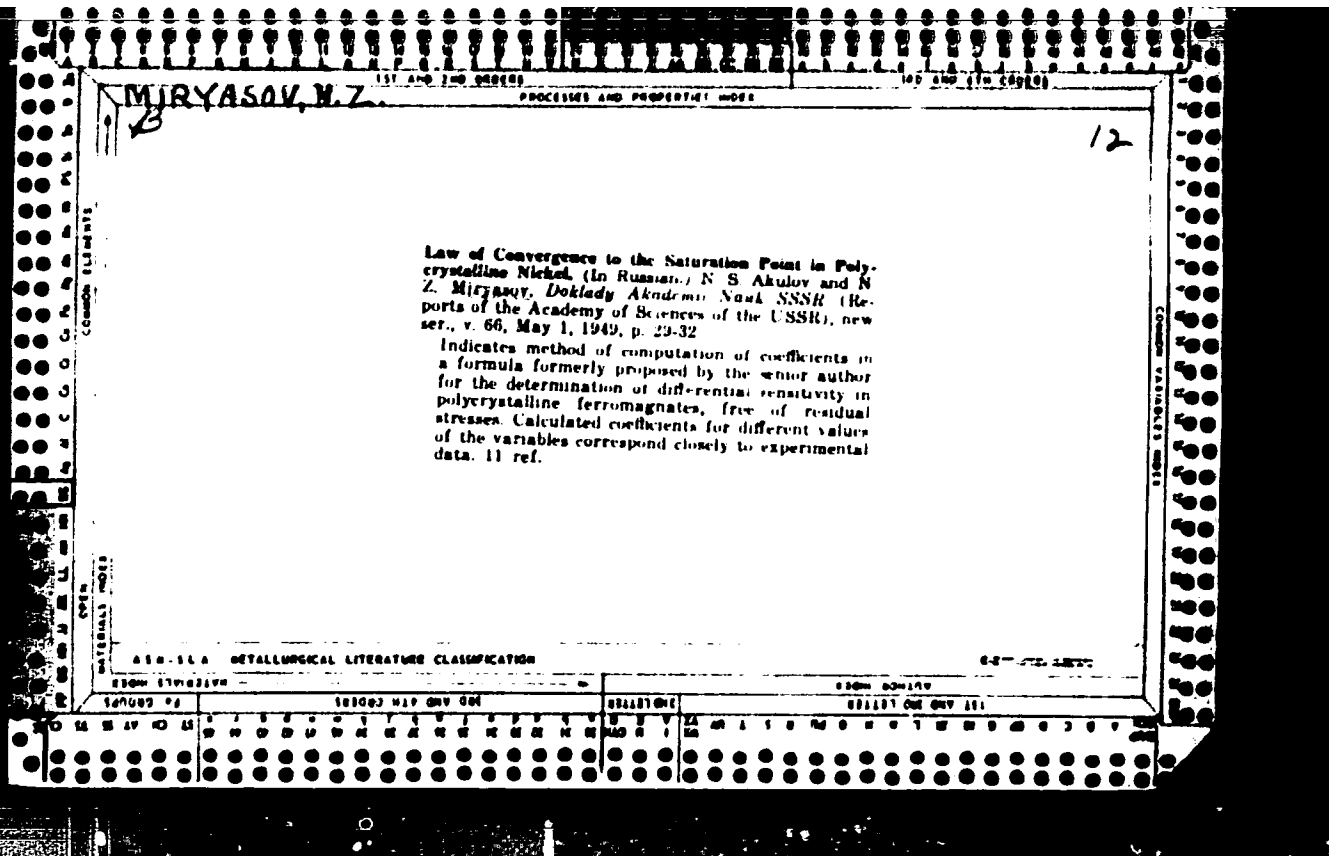
2

MIRYANOV, N.S., kapitan meditsiny

Antitubercular...  
Voen. med. zh. 1958, 50, 111.









D'YAKOV, G.P.; MIRYASOV, N.Z.; TELESNIN, R.V.

Nikolai Sergeevich Akulov; on his 50th birthday. Uch. zap.  
Mosk. un. no. 162:3-7 '52. (MLRA 8:7)

(Akulov, Nikolai Sergeevich, 1900--)

MIRYASOV, N.Z.

Law of approximation to the saturation of invar. Uch. zap. Mosk.  
un. no.162:107-109 '52. (MIRA 8:7)  
(Nickel-iron alloys--Magnetic properties)

**MIRYASOV, N.Z.**

Determining the absolute value of the first constant of magnetic anisotropy according to the law of approach to saturation. Vest. Mezh.un.10 no.10:81-85 0 '55. (MLRA 9:4)

1.Kafedra magnetizma.  
(Ferromagnetism)

*1st 21/12/58*  
"VOLKOV, D. I., KOHDORSKIY, E. I., KRINCHIK, G. S., MIRYASOV, N. A., PARSANOV,  
A. P., ROBE, V. E., CHECHERNIKOV, V. I. and GOFMAN, U. ‡ (Moscow)

"Results of Studies of Certain Magnetic and Magneto-Optical Properties of  
Ferro-Magnetics:"

- "Saturation Magnetization of CuNi Alloys at Low Temperatures."
- "Magnetic Properties of MnB System."
- "Temperature Dependence of Paramagnetic Susceptibility of Ferrites."
- "Magneto-Optical Resonance in Ferromagnetics." (Krinchik)

report presented at Colloquium on Magnetism, Grenoble, France, 2-5 Jul 58.

Eval: B-3,111,755      3 Sep 58



1957/12/11-12/13  
AUTHOR: Miryasov, N. Z.

TITLE: Susceptibility of the Paraprocess of a Fe-Ni Alloy in the Temperature Range 77-290°K (Vospriimchivost' paroprotsessa splava Fe-Ni v intervale temperatur 77-290°K)

PERIODICAL: Fizika Metallov i Metallovedeniye, 1958, Vol 6, Nr 1 pp 188-190 (USSR)

ABSTRACT: The temperature dependence of the paraprocess was investigated for a Fe-Ni alloy containing 38.82 at.% Ni and 61.18 at.% Fe. At room temperature this alloy has a high susceptibility of the paraprocess which also facilitates its measurement during transition to the lower temperature, where it remains still relatively high compared to such ferromagnetics as nickel and iron. Furthermore, this alloy saturates at relatively low magnetic fields permitting the use of a permanent magnet instead of an electromagnet. A magnetising coil with forced cooling was applied ensuring an adequate strength of the current during all the measurements. Thereby the possibility arose of obtaining fields up to 5000 Oe the uniformity of the field at a distance of 20 atm was within the limits of 1.5% at the ends. The susceptibility

Card 1/3

3. V/129-1-1-11/17

Susceptibility of the Paraprocess of a Fe-Ni Alloy in the  
Temperature Range 77-290°K

was measured by means of a differential ballistic method. The specimen was a rotation ellipsoid with an axis ratio of 1:10 (2a = 7mm, 2b = 70 mm), machined from the alloy preliminarily annealed in vacuum for twelve hours at 1200°C. For removing the stresses caused by the machining the ellipsoid was annealed in vacuum for 10 hours at 1000°C and cooled to 600°C with a rate of 100°C / hour and then hardened in water. The chemical composition of the specimen (wt.%) was as follows: 50.2% Fe, 49.8% Ni, 0.02% C, 0.15% Cu, 0.02% S. The obtained results are summarized in the following conclusions:

1. In the temperature range under consideration the susceptibility of the paraprocess is invariant and proportional to  $H^{1/2}$ , which is in agreement with the theory of Holstein, T. (Ref. 1).
2. In the temperature range 150 to 290 K the susceptibility of the paraprocess is a linear function of  $T$ . The point corresponding to the liquid nitrogen temperature is below this straight line which, in all probability, indicates a gradual transition below 150 K to a linear dependence of

Card 2/3

10V/126-6-1-32/22

Susceptibility of the Paraprocess of a Fe-Ni Alloy in the  
Temperature Range 77-290°K

the susceptibility of the paraprocess on the temperature. This is confirmed by the satisfactory coincidence of the measured value of the susceptibility of the paraprocess at the nitrogen temperature with the value calculated according to Eq.(3) of Holstein and Primakoff and also by comparing the value of the parameter  $\Theta'$  of the Bloch formula of the 3/2 power law of Kondorskiy and Fedotov (Ref.4) with the value of  $\Theta'$  calculated according to Eq.(3) of Holstein and Primakoff. Acknowledgments are made to Professor Ye. I. Kondorskiy for his valuable comments.

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

SUBMITTED: November 5, 1956

Card 3/3

1. Iron-nickel alloys--Magnetic properties 2. Iron-nickel  
alloys--Temperature factors 3. Mathematics--Applications



6731

12-1275  
17-2100

24(3)  
**AUTHORS:** Miryasov, N.Z., and Parsanov, A.I. SOV. Sci. Ser. 54-1-6 20  
**TITLE:** Magnetic Properties and Structure of Manganese-Boron Alloys  
**PERIODICAL:** Vestnik Moskovskogo universiteta. Seriya matematika, mekhanika, astronomii, fiziki, khimii. 1959, Nr. 1, Pt. 43-50 USSR  
**ABSTRACT:** The authors investigate 20 Mn-B-alloys with 5 up to 52.7% of B (atomic weight). For a content of boron greater than 33% the alloys were ferromagnetic. The intensity of magnetization  $\sigma$  reached its limit value in fields of 10-12 thousand oersted; this limit value was taken as  $\sigma_0$ . In the interval 21-300° K it is  $\sigma_s = \sigma_0(1 - \alpha T)$ .  $\sigma_0$  increases with the content of boron and reaches its maximum at 50%; for a greater content of boron there again appears a diminution of  $\sigma_0$ . In all alloys the Curie-point was  $280 \pm 4$  °C. In the alloys there appear the compositions  $Mn_4B$ ,  $Mn_2B$ ,  $Mn_3B$ , and  $Mn_3B_4$ . The character of the tetramagnetism is MnB. The atomic distance Mn-Mn of this combination is such that the volume integral is positive if a certain center

Card 1/2

Magnetic Properties and Structure of  
Manganese-Boron Alloys

6231  
SOV 1957 10 10 13

the diameter of the empty d-shell is  $1.07 \text{ \AA}$ . The absolute  
saturation of  $6 \text{ \AA}$  for Mn is  $1.7 \text{ \AA}$  and greater than  $6 \text{ \AA}$  for Ni.  
The authors mention the paper by Ye I. Kondorskiy.  
There are also various references, of which are German,  
American, Swedish, British, and Russian.

ASSOCIATION: Kafedra magnetizma i fiziki metalov  
SUBMITTED: November 10, 1957

AUTHORS: Miryasov, N. Z. and Rubtsov, V. K. SOV/120-59-41/46  
 TITLE: A Laboratory Electromagnet  
 PERIODICAL: Priroda i tekhnika eksperimenta, 1959, Nr 5,  
 pp 142-143 (USSR)

ABSTRACT: The FL-1 electromagnet is a universal laboratory electromagnet. A sectional drawing of it is shown in Fig 1 in which 1 is the yoke cast from Armco iron. The yoke has holes with rods (also made from Armco iron) tightly pressed into them. The ends of these rods form the magnet gap. The gap between the pole pieces can be between 0 and 100 mm. The gap can be adjusted with the aid of the flywheel 3. A hole is drilled right through the rods (16 mm dia.). The coils 5 are wound with the PBD wire having a square cross-section of 2.44 x 2.44 mm. Fig 2 shows the dependence of the field intensity on the magnetizing current for different values of P and  $\phi$  (indicated in Fig 2). Other parameters of the magnet are as follows: diameter of the movable rods 122 mm, number of windings 5400, resistance of the coil 16.8 Ohm, power consumption at 220 V 3 kW, overall size 420 x 625 x 1160 mm<sup>3</sup>, overall height 200 kg. ✓

Card1/2

A Laboratory Electromagnet

SOV/120-59-5-41/46

There are 3 figures.

ASSOCIATION: Fizicheskiy fakul'tet MGU (Department of Physics,  
Moscow State University)

SUBMITTED: August 23, 1958 ✓

Card 2/2

24 (3)

AUTHOR:

Miryasov, N. V., Parsenov, A. I.

DDV/49-03-3-1/31

TITLE:

Ferromagnetism of the Alloys Mn-2 (Ferromagnetizm splavov Mn-2)

PERIODICAL:

Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1969, Vol. 3, No. 1, pp. 3-8, 15 USSR

ABSTRACT:

In the present paper the authors investigated the dependence of spontaneous magnetization  $\sigma_0$  and of the Curie point  $\theta$  on the composition as well as the conditions for the occurrence of ferromagnetism in Mn-2-alloys. More than 10 different alloys with a 0.1 to 0.2 at% boron content were investigated. Alloys containing up to 11 at% boron proved to be non-ferromagnetic at room temperature as well as at the temperature of liquid nitrogen. For this reason 11 samples mentioned in the table were used for further investigations. The magnetization attained its maximum value in fields of 1000-11000 o. This value was assumed as a saturation-magnetization  $\sigma_s$ . The temperature dependence of  $\sigma_s$  in the temperature range-room temperature up to 77°K is shown for one of the samples in figure 1. It appears from the

Card 1/3

Ferromagnetism of Mn-B alloys

dependence of magnetization  $\sigma$  on the concentration of Mn in Mn-B alloys. It is shown that  $\sigma$  increases with increasing Mn content and reaches its maximum at higher Mn content than in pure Mn. The Curie temperature according to the temperature in the field  $H$  is shown in figure 3. The results of x-ray and neutron diffraction experiments point to the presence of two phases in the alloys investigated. The type of the lattice as well as its parameters were determined in monocrystals for Mn-B and Mn-B.

The values obtained are in good agreement with the data by Kiessling (Ref 7). It may be seen from the data mentioned that in alloys of the Mn-B-system the Curie point remains practically unchanged at different B-concentrations and is equal to  $289 \pm 4$ . Conclusion: ferromagnetism occurs in alloys with more than 33% B at the beginning of the separation of the MnB-phase. The magnetization  $\sigma_0$  attains the maximum value for the pure MnB-phase and is equal to  $110 \pm 1$  kg/cm<sup>2</sup>. The average atomic moment for MnB is equal to  $1.7 \mu_B$ . The

Card 2/3

Ferromagnetism of the Alloys Mn-B

107/10-20-10-10

...  
...  
... evidently may be  
...  
...  
... reference ...

ASPHATI : Fizicheskiy fakul'tet Moskenskogo gosudarstvennogo  
Lomonosova (Physics Department of the Moscow State University  
imeni M. V. Lomonosov)

Card 3/3

24(3)

AUTHORS:

Miryasov, N. Z., Kolomin, L. G.

SOV/56-36-6-49/66

TITLE:

Magnetic Moments and Curie Points of Ferrites of the System  
Cu-Cd (Magnitnyye momenty i tochki Kyuri ferritov sistemy  
Cu-Cd)

PERIODICAL:

Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1966,  
Vol 36, Nr 6, pp 1935-1936 (USSR)

ABSTRACT:

The authors give a report on investigations of the temperature dependence of the specific saturation magnetization and the determination of the magnetic moments of solid solutions of ferrites of the kind  $Cd_xCu_{1-x}Fe_2O_4$  at a relative  $Cd^{2+}$  concentration of up to 10 % (of the total quantity of the bivalent ions). The specific magnetization was measured in the interval of from 6,000 to 13,000 Oe at 6 different temperature values of between 78 and 293° K. Saturation magnetization was determined separately for each temperature by extrapolation. Figure 1 shows the measured dependence of the magnetic moment (in Bohr magnetons per "molecule" of the solid solution) on the composition of the solution. Ye. V. Gorter (Ref 1) carried out similar investigations for another ferrite. In the

Card 1/2



Magnetic Moments and Curie Points of Ferrites of the System Cu-Cd SOV/56-36-6-49/66

following the influence exercised by the temperature treatment of the samples upon the magnetic moment is discussed. Figure 2 shows the dependence of the Curie temperature  $\theta$  on the composition of the sample. A similar course of the curve (declining with increasing Cd-content) has already been found by G. A. Smolenskiy (Refs 2,3). The  $\theta$ -values are, however, higher ( $\text{CuFe}_2\text{O}_4$  :  $\theta = 450 \pm 3^\circ \text{C}$ , Smolenskiy:  $\theta \approx 425^\circ \text{C}$ ). There are 2 figures and 3 Soviet references.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet (Moscow State University)

SUBMITTED: February 27, 1959

Card 2/2

MIRYASOV, N. Z.

PHASE I BOOK EXPLOITATION

007-4126

Vsesoyuznoye sveschenaniye po magnitnoy strukture ferromagnetikov,  
Krasnoyarsk, 1958.

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

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

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

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

Card 1/11

Magnetic Structure (Cont.)

SOV 75/26

COVERAGES: The collection contains 33 scientific articles presented at the All-Union Conference on the Magnetic Structure of Ferromagnetic Substances, held in Krasnoyarsk in June 1968. The material contains data on the magnetic structure of ferromagnetic materials and on the dynamics of the structure in relation to magnetic field changes, elastic stresses, and temperature. According to the Foreword the study of ferromagnetic materials had a successful beginning in the Soviet Union in the 1930's, was subsequently discontinued for many years, and was resumed in the 1950's. No personalities are mentioned. References accompany individual articles.

TABLE OF CONTENTS:

Foreword	3
Shur, Ya. S. (Institut Fiziki metallov AN SSSR - Institute of Physics of Metals, AS USSR, Sverdlovsk). On the Magnetic Structure of Ferromagnetic Substances	5
Card 2/11	

Magnetic Structure (Cont.)

SOV/5526

Vlasov, A. Ya., and I. L. Gus'kova [Institute of Physics, Siberian Branch AS USSR, Krasnoyarsk]. Study of Iron Magnetostriction at Various Temperatures 233

Gus'kova, I. L. [Institute of Physics, Siberian Branch AS USSR, Krasnoyarsk]. Determination of the Constants of Iron Magnetostriction on a Polycrystal Specimen 241

Miryasov, N. Z. [Physics Department of the Moscow State University]. Differential Susceptibility of Nickel Ferrite  $\text{NiFe}_2\text{O}_4$  in the Region of Approach to Saturation 247

AVAILABLE: Library of Congress

Card 11/11

JA/wrc/os  
10/28/61



S/196/61/000/010/005:037  
E194/E155

AUTHOR Miryasov, N.Z.

TITLE The differential susceptibility of nickel-ferrite  
 $\text{NiFe}_2\text{O}_4$  in regions approaching saturation

PERIODICAL: Referativnyy zhurnal, Elektrotehnika i energetika  
no 10, 1961, 3, abstract 10B 31 (Symposium "The  
magnetic structure of ferromagnetics", Novosibirsk,  
Siberian Division AS USSR, 1960, 247-250)

TEXT: Investigations were made of the relation between the  
magnetic field intensity  $H$  and the differential susceptibility  
 $\chi$  of polycrystalline nickel ferrite in the region approaching  
saturation. The data was used to determine the effective value of  
the constant of magnetic anisotropy  $k_{\text{eff}}$ . The specimens were  
made of oxides of analytical purity grade. The material, finely  
powdered and carefully mixed, was first fired at 900 °C and again  
finely milled. The resulting product was pressed in cylindrical  
moulds which were fired at 1250 °C. The density of the specimens  
was 5.13 g/cm<sup>3</sup> and X-ray investigations showed good uniformity  
throughout the volume. The relation between the saturation  
Card 1/2

The differential susceptibility

S/196/61/000/010/000/037  
E194/E155

magnetisation  $I_s$  and the temperature in the range 77 - 293 °K is given by the formula:

$$I_s = I_0 (1 - aT^2)$$

$I_0 = 264$  gauss (by extrapolation to 0 °K). The effective magnetic moment on the molecule is 2.16 μB. Measurements of susceptibility as function of  $H$  at temperatures of +20, -20, -60 and -101 °C showed that in the range  $H = 1000-2500$  oe the law of approximation to saturation is of the form  $I = I_s(1 - a/H - b/H^2)$ . The sensitivity of the differential ballistic equipment was  $3 \times 10^{-3}$  gauss/mm which when  $H = 50-60$  oe ensured a sensitivity for  $dI/dH$  of  $5 \times 10^{-5}$  gauss/oe mm. The measurements were made in a solenoid with forced cooling which contained a coil to set up the premagnetisation field  $\Delta H$ . The measured value of  $k_{eff}$  at room temperature was found to be  $-4.05 \times 10^{-4}$  erg/cm<sup>3</sup>.

literature references.  
ASSOCIATION Moskovskiy universitet im M.V. Lomonosova  
(Moscow University imeni M.V. Lomonosov)

Abstractor's note Complete translation  
Card 2/2

MIRYASOV, N.Z.; SOROKINA, S.A.

Perminvar effect in compound Ni - Zn - Cr ferrites. Fiz. tverd. tela  
5 no.9:2641-2646 3 1963. (MIRA 10:1)

1. Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosov.





ACCESSION NR: AP4011769

S/0181/64/006/001/0290/0293

AUTHOR: Miryasov, N. Z.

TITLE: Field dependence on magnetic susceptibility of the ferrite yttrium garnet in a saturated field

SOURCE: Fizika tverdogo tela, v. 6, no. 1, 1964, 290-293

TOPIC TAGS: magnetic susceptibility, ferrite, yttrium garnet, differential magnetic susceptibility, magnetic saturation, magnetic anisotropy, paramagnetism

ABSTRACT: The author has studied the field dependence of differential magnetic susceptibility of polycrystalline ferrite yttrium garnet,  $Y_3Fe_5O_{12}$ , at 20 and -196C in fields ranging from 150 to 2600 oersteds. He has discovered complexities in the law by which magnetization approaches saturation. In the investigated range of field, the dependence of I on field H may be shown in two segments, differing from each other in the form of the function I(H) and in the value of  $I_s$ . The relationship is shown in Fig. 1 on the Enclosure. The effective values of the magnetic anisotropy constant were computed to be  $6.3 \cdot 10^3$  and  $28.4 \cdot 10^3$  oersteds/cm<sup>2</sup> at temperatures of 20 and -196C respectively. The values are comparable to those obtained by other authors for single crystals. In a weak field, changes in

Card 1/2

ACCESSION NR: AP4011769

magnetization take place by rotation of the I vector and by a mechanism very much like the paramagnetic process. In a strong field, changes in magnetization are apparently due to two different mechanisms as well. One of these results from local forces in planes that yield spins from parallel orientations in the zones where the forces act. The nature of the other mechanism is not yet clear. Orig. art. has: 2 figures, 1 table, and 7 formulas.

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

SUBMITTED: 17Jun63

DATE ACQ: 14Feb64

ENCL: 01

SUB CODE: PH

NO REF SOV: 006

OTHER: 003

Card 2/3

ACCESSION NR: APL011770

S/0161/64/006/001/0294/0296

AUTHORS: Miryasov, N. Z.; Puzey, I. M.

TITLE: Study of induced magnetic anisotropy in Ni-Zn-Cr ferrite containing CoO

SOURCE: Fizika tverdogo tela, v. 6, no. 1, 1964, 294-296

TOPIC TAGS: Ni-Zn-Cr ferrite, CoO inclusion, induced magnetic anisotropy, magnetic anisotropy, uniaxial anisotropy, anisotropy constant

ABSTRACT: The influence of temperature on the constant ( $K_u$ ) of induced uniaxial anisotropy and on the spontaneous magnetization ( $I_s$ ) of a ferrite was studied. Experiments were conducted on Ni-Zn-Cr ferrite in the temperature range of -196 to 300C. Field dependence of  $K_u$  was investigated in the interval of 3-21 kiloersteds at -196, 20, 90, and 200C. The magnitude order of  $K_u$  and its linear relation to  $I_s^2$  agreed with the theory of directed ordering. The work was conducted in order to verify previously obtained results. Anisotropy was studied by the method of turning moments, and the specimen under investigation was a sphere  $10.7350 \pm 0.0005$  mm in diameter, magnetized for 5 hours at 300C in the field of an electromagnet. It was determined that (with the drop of temperature) the value of  $K_u$  increased

Card 1/2

ACCESSION NR: AP4011770

within the range of  $10^2-10^4$  erg/cm<sup>3</sup>. This magnitude of  $K_u$  agreed with the theory of directed ordering. The differential  $dK/dT$  reached a maximum near 0°C and dropped to zero 0°K. It was further determined that below 50C the relation between  $K_u$  and  $I_s$  is linear. A slight deviation from this relation at higher temperatures was caused by an additional magnetization along the field. A series of experiments on another specimen showed that with sufficiently high fields  $K_u$  increased directly with the field intensity. Orig. art. has: 3 graphs and 2 formulas.

ASSOCIATION: Fizicheskiy fakultet MGU im. M. V. Lomonosova (Physics Department MGU); In-t pretsizionnykh splavov TsNIICM (Institute of Precise Alloys TsNIICM)

SUBMITTED: 17Jun63

DATE ACQ: 11Feb64

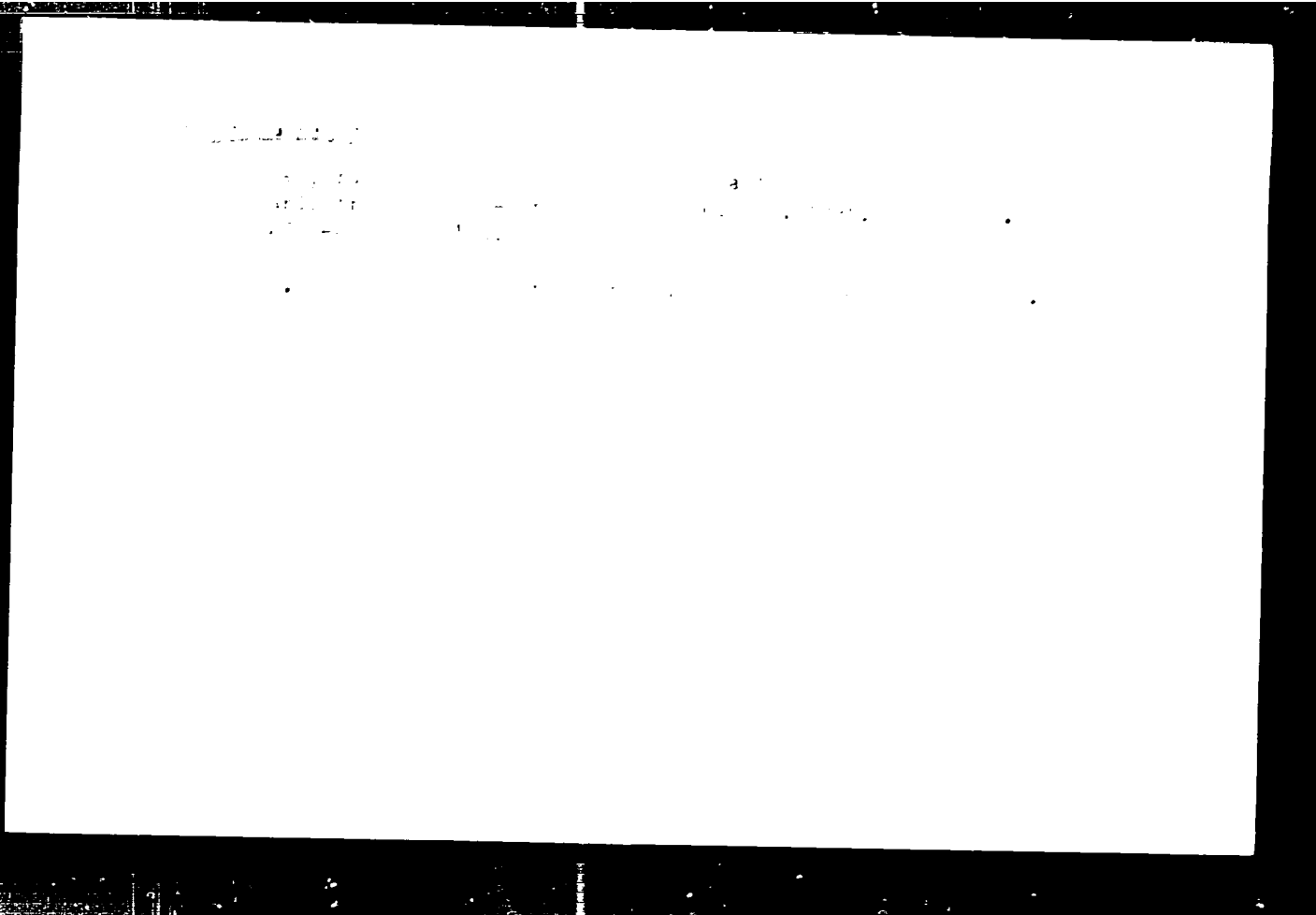
ENCL: 00

SUB CODE: PH .

NO REF SOV: 005

OTHER: 005

Card 2/2



L 11081-65  
AS(m)-2/APM... ASD(a)-5/ESD... /MP(k)/MP... LSP(d)/  
ACCESSION NO: A4046632 8/0181/64/008/010/3131/3136

AUTHORS: Milyukov, N. Z.; Senkina, V. A.

TITLE: Ferromagnetic resonance in a ferrite with induced uniaxial anisotropy (B)

SOURCE: Fizika tverdogo tela, v. 6, no. 10, 1964, 3131-3136

TOPIC TAGS: ordered alloy, ferrite, ferromagnetic resonance, line width, absorption band, induced anisotropy

ABSTRACT: In view of the possibility of reducing the resonance absorption line width by means of inducing uniaxial anisotropy, the authors investigated ferromagnetic resonance absorption in a polycrystalline ferrite having particular properties suitable to thermomagnetic working. The ferrite had a composition  $Co_{0.02}Ni_{0.36}Zn_{0.36}Cr_{0.2}Fe_{2.06}O_4$ , whose properties were investigated by one of

Card 1/3

L 11084-65

ACCESSION NR: AP4046632

the authors earlier (with S. A. Sorokina, FTT v. 5, 2, 641, 1963; with I. M. Pusey, FTT v. 6, 294, 1964). The ferromagnetic resonance was investigated in spherical samples 1.4 mm in diameter by a standard method, using a short circuited waveguide section at 9,520 Mcs. The thermomagnetic treatment was at 250C for 5 hours in a field  $H = 3,000$  Oe. The investigations were made in the temperature interval 150--570C, in which the resistance of the sample changed from  $10^5$  to  $10^3$  ohm-cm. The quantities measured were the uniaxial magnetic anisotropy, the ferromagnetic resonance absorption line width, and the resonant field. The temperature dependence of the induced anisotropy constant measured at high frequencies turn out to differ noticeably from that measured under static conditions in the earlier investigation. The present theory of directional ordering, which is in good agreement with all other results, cannot provide a satisfactory explanation of this anomaly. The temperature dependence of the resonance absorption line width also discloses appreciable anomalies at low temperatures, for which no perfectly satisfactory

Card 2/3



L 11081-65

ACCESSION NR: AP4046632

explanation is found: Orig. art. has: 4 figures and 1 formula.

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

SUBMITTED: 11Feb64

ENCL: 00

SUB CODE: MM, SS

NR REF SOV: 004

OTHER: 005

Card 3/3

L 8620-66

ACC NR: AP5027032

SOURCE CODE: UR/0120/65/000/005/0194/0197

AUTHOR: Miryasov, N. Z.; Pinchuk, A. A.; Snytkin, B. V.; Shpin'kov, N. I.

B-34

ORG: Physics Faculty, MGU (Fizicheskiy fakul'tet MGU)

TITLE: A device for ferromagnetic film production by high vacuum evaporation

SOURCE: Pribory i tekhnika eksperimenta, no. 5, 1965, 194-197

TOPIC TAGS: high vacuum, ferromagnetic film, vacuum pump, vacuum chamber

ABSTRACT: Vacuum evaporation chambers, intended for the production of ferromagnetic films, must be placed at considerable distances from vacuum pumps because such pumps are usually made of ferromagnetic materials which influence in an unpredictable way the magnitude and configuration of the magnetic fields used during condensation. However, long vacuum tubing significantly reduces the resulting vacuum. Consequently, the authors designed a unit capable of rotating the sample under vacuum, since it was shown earlier (D. O. Smit, J. Appl. Phys., 1961, 32, 705) that a rapidly moving support makes possible the production of films of complex composition and definite magnetic properties. In addition, because of consecutive pumping, a double vacuum chamber, and heat resistant gaskets with low vapor pressure, the device is capable of reaching  $1.0 \cdot 10^{-7}$  Torr. The pumping is carried out by diffusion pumps using VM-1 oil without nitrogen traps. Uniform vertical (horizontal) magnetic fields are created by Helmholtz coils 70 cm (170 cm) in diameter. The maximum field is 450 Oe ( $\sim 100$  Oe). Orig. art. has: 3 figures.

UDC: 539.234:538.221

Card 1/2

I. 8620-66

ACC NR: AP5027032

SUB CODE: IE,EM / SUBM DATE: 15Jul64 / ORIG REF: 003 / OTH REF: 002

Card 2/2 jrn

L 00482-66 EWT(1)/EWT(m)/T/EWP(t)/EED-2/EWP(b)/EWA(e) IJP(c) JD/HW  
ACCESSION NR: AP5012587 UR/0181/65/007/005/1577/1579

AUTHOR: Miryasov, N. Z. <sup>445</sup>; Semkina, V. A. <sup>445</sup>  
TITLE: Temperature dependence of ferromagnetic resonance parameters on ferrites with induced uniaxial magnetic anisotropy

SOURCE: Fizika tverdogo tela, v. 7, no. 5, 1965, 1577-1579 <sup>21,44</sup>

TOPIC TAGS: ferromagnetic resonance, ferrite, magnetic annealing, anisotropy <sup>6</sup>

ABSTRACT: This is a continuation of earlier investigations of the effect of thermal treatment and of permivar properties of ferrites containing cobalt (FTT v. 6, 3131, 1964 and earlier papers). The purpose of the present investigation was to determine the influence of the induced anisotropy, due to ion diffusion, on the temperature variation of the resonant field ( $H_{res}$ ) and of the width ( $2\Delta H$ ) of the resonance absorption curve, and also to clarify the role played by the  $Fe^{2+}$  ions in the temperature variation of these ferromagnetic-resonance parameters in spinel-type ferrites having a negative constant of cubic magnetic anisotropy. Two ferrites, with compositions  $Co_{0.02}Ni_{0.52}Zn_{0.26}Fe_{2.2}O_4$  (A) and  $Co_{0.02}Ni_{0.52}Zn_{0.26}Cr_{0.2}Fe_{2}O_4$  (B), were investigated. Magnetic annealing of the ferrite samples was carried out at 320C for four hours in a field of 3000 Oe. In all other respects,

Card 1/2

L 00482-66

ACCESSION NR: AP5012587

3

the magnetic annealing as well as the measurement of the ferromagnetic resonance were the same as in the earlier investigation. The results of the tests are as follows: 1. Magnetic annealing leads to the occurrence of an anisotropic field, defined as the difference between the resonant fields along the direction of easy and light magnetization. 2. A dip appears on the curves of  $2\Delta H$ , corresponding to the direction of easy magnetization (at 195 and 230K for compositions A and B, respectively). It is established that at these temperatures the natural cubic anisotropy reverses sign. 3. The resonance absorption is anisotropic, and increases rapidly at temperatures in which the induced anisotropy constant increases strongly. The results give grounds for assuming that the character of the temperature dependence of the resonant properties is connected with the additive action of two types of anisotropy--natural cubic, and uniaxial induced by the magnetic annealing. Orig. art. has: 1 figure and 1 table.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova (Moscow State University) 4455

SUBMITTED: 25Dec64

ENCL: 00

SUB CODE: 88

NR REF SOV: 003

OTHER: 002

Card 2/2



L 26673-66 EWT(1)

ACC NR: AP6007174

SOURCE CODE: UR/0188/66/000/001/0066/0071

AUTHORS: Miryasov, N. Z.; Nguyen T'ya U

50  
B

ORG: Magnetics Department MGU (Kafedra magnetizma MGU)

TITLE: Magnetic and pulsed properties of a ferrite with induced uniaxial magnetic anisotropy

SOURCE: Moscow. Universitet. Vestnik. Seriya III. Fizika astronomiya, no. 1, 1966, 66-71

TOPIC TAGS: ferrite, magnetic anisotropy, uniaxial crystal, computer component, magnetic hysteresis, temperature dependence, magnetic permeability

ABSTRACT: This is a continuation of earlier work by one of the authors (Miryasov, with S. A. Sorokina, Fizika tverdogo tela v. 5, no. 9, 2641, 1963) dealing with the ferrite of composition  $Co_{0.02}Ni_{0.52}Zn_{0.26}Cr_{0.20}Fe_2O_4$  and its uniaxial magnetic anisotropy induced by magnetic annealing. The present paper is devoted to a

Card 1/2

UDC: 538.245

2

L 26673-66

ACC NR: AP6007174

more detailed investigation of the magnetic and pulsed properties of this ferrite in a certain temperature region. These properties are of interest from the point of view of its possible use in certain electronic computer and automation applications. The investigations were made on toroidal samples of various dimensions and consisted essentially of plotting the hysteresis loop at different temperatures, determining the times of pulsed reversal of magnetization, plotting the isotherms of the pulsed reversal of magnetization, and determining the temperature dependence of the initial permeability. The results showed that magnetically-annealed ferrites retain the perminvar effect down to  $-40^{\circ}\text{C}$ , where the magnetic anisotropic constant of the ferrite reverses sign. The distortion of the rectangular hysteresis loop and its broadening at lower temperatures are probably due to a change in the magnetic structure, connected with this reversal of the sign. Above the transition temperature, the investigated ferrite has relatively large magnetic viscosity, and below the transition temperature the pulse properties of the sample exhibit many anomalies. The results are interpreted from the point of view of the theory of directed magnetic ordering. Orig. art. has: 5 figures, 1 formula, and 2 tables.

SUB CODE: 20/ SUBM DATE: 19Sep64/ ORIG REF: 001/ OTH REF: 003

Card 2/2 BLC



ACC NR: AP6015485

SOURCE CODE: UR/0181/66/008/005/1582/1584

AUTHOR: Miryasov, N. Z.; Semkina, V. A.

58  
E

ORG: Moscow State University im. M. V. Lomonosov (Moskovskiy gosudarstvennyy universitet)

TITLE: The effect of small additions of  $Co^{++}$  on the ferromagnetic resonance of thermomagnetically treated Ni-Zn-Cr ferrites

SOURCE: Fizika tverdogo tela, v. 8, no. 5, 1966, 1582-1584

TOPIC TAGS: ferrite, ferromagnetic resonance, thermomagnetic effect, cobalt

ABSTRACT: The examined ferrite specimens had a composition  $Co_x(NiZn)_{0.8-x}Cr_{0.2}Fe_2O_4$  where  $x=0, 0.02, 0.04, 0.06,$  and  $0.08$ . The specimens were prepared from the same initial materials and under similar technological conditions. The content of  $Fe^{++}$  was 0.03%; the specific electrical resistance was in the range of  $10^5$  to  $10^6$  ohm·cm. The temperature relationship of the absorption band width, the resonance field, and the anisotropy field were examined in the 77 to 520°K range. The investigation results suggest that the interactions between the ions of  $Co^{++}$  and their environment is of an extremely complex nature, and they they have an enormous effect on the magnitude and the temperature relationship of the ferromagnetic anisotropy of ferrite-spineis. Orig. art. has: 1 figure, 1 table.

SUB CODE: 20/ SUBM DATE: 15Mart5/ ORIG REF: 002/ OTH REF: 003

Card 1/1

L 26666-66 EWT(1)/EWT(m)/EWA(d)/T/ENP(t) IJP(c) JD/HW

ACC NR: AP6010412

SOURCE CODE: UR/0126/66/021/003/0468/0469

AUTHORS: Miryasov, N. Z.; Nguyen T'yan

ORG: Moscow State University im. M. V. Lomonosov (Moskovskiy gosuniversitet)

TITLE: Magnetic and impulse properties of ferrites containing different amounts of Co subjected to thermomagnetic treatment

SOURCE: Fizika metallov i metallovedeniye, v. 21, no. 3, 1966, 468-469

TOPIC TAGS: ferrite, magnetic anisotropy, nickel compound, cobalt compound, zinc compound, chromium compound, alternating magnetic field, thermomagnetic field

ABSTRACT: The hysteresis parameters of a number of ferrites (having the general composition  $Co_x(NiZn)_{0.8-x}Cr_{0.2}Fe_2O_4$ , where  $x = 0.02, 0.04, 0.06, \text{ and } 0.08$ ) were determined as a function of the temperature and frequency of the applied field. The experimental results are summarized in graphs and tables (see Fig. 1). It was found that the relationship between  $S$  (the coefficient of magnetic reversal) and  $H_a$  (the anisotropy field) is similar to that reported by G. Ya. Smit and Kh. Veyn (Ferrity, M., IIL, 1962, section 63).

Card 1/2

UDC: 538.215

L 26666-66

ACC NR: AP6010412

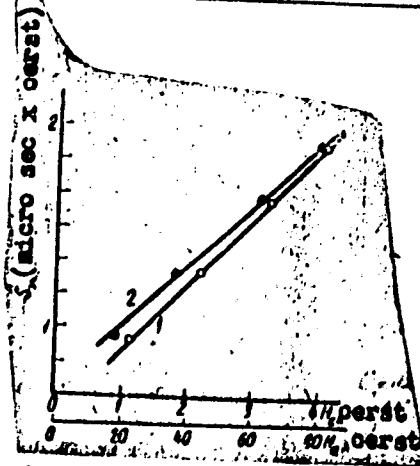


Fig. 1. Dependence of  $S$  on  $H_a$  (1) and  $H_c$  (2) where  $2H_c = H_m$ , and  $H_m$  is the value of the alternating magnetic field.

Orig. art. has: 2 graphs and 1 table.

SUB CODE: 20/      SUBM DATE: 10May65/      ORIG REF: 004/      OTH REF: 003

Card 2/2      BLC

ACCESSION NR: AP4043380

S/0181/64/006/008/2515/2516

AUTHORS: Miryasov, N. Z.; Semkina, V. A.

TITLE: Temperature dependence of the constant of induced magnetic anisotropy of Ni-Zn-Co ferrite

SOURCE: Fizika tverdogo tela, v. 6, no. 8, 1964, 2515-2516

TOPIC TAGS: uniaxial crystal, ferrite material, metalworking, temperature dependence, orientation, spontaneous magnetism

ABSTRACT: Uniaxial ferrite with composition  $\text{Co}_{0.02}\text{Ni}_{0.52}\text{Zn}_{0.26}\text{Fe}_{2.2}\text{O}_4$  which has perminvar properties, was treated by thermomagnetic working in a magnetic field, and uniaxial magnetic anisotropy was induced in it. The temperature dependence of the magnetic anisotropy was investigated in the uniform field of an electromagnet by a torque method in a temperature interval 77--540K. The thermomag-

Card 1/3

3,