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Water, Highway, Air and Industrial Transport

SOV/1525

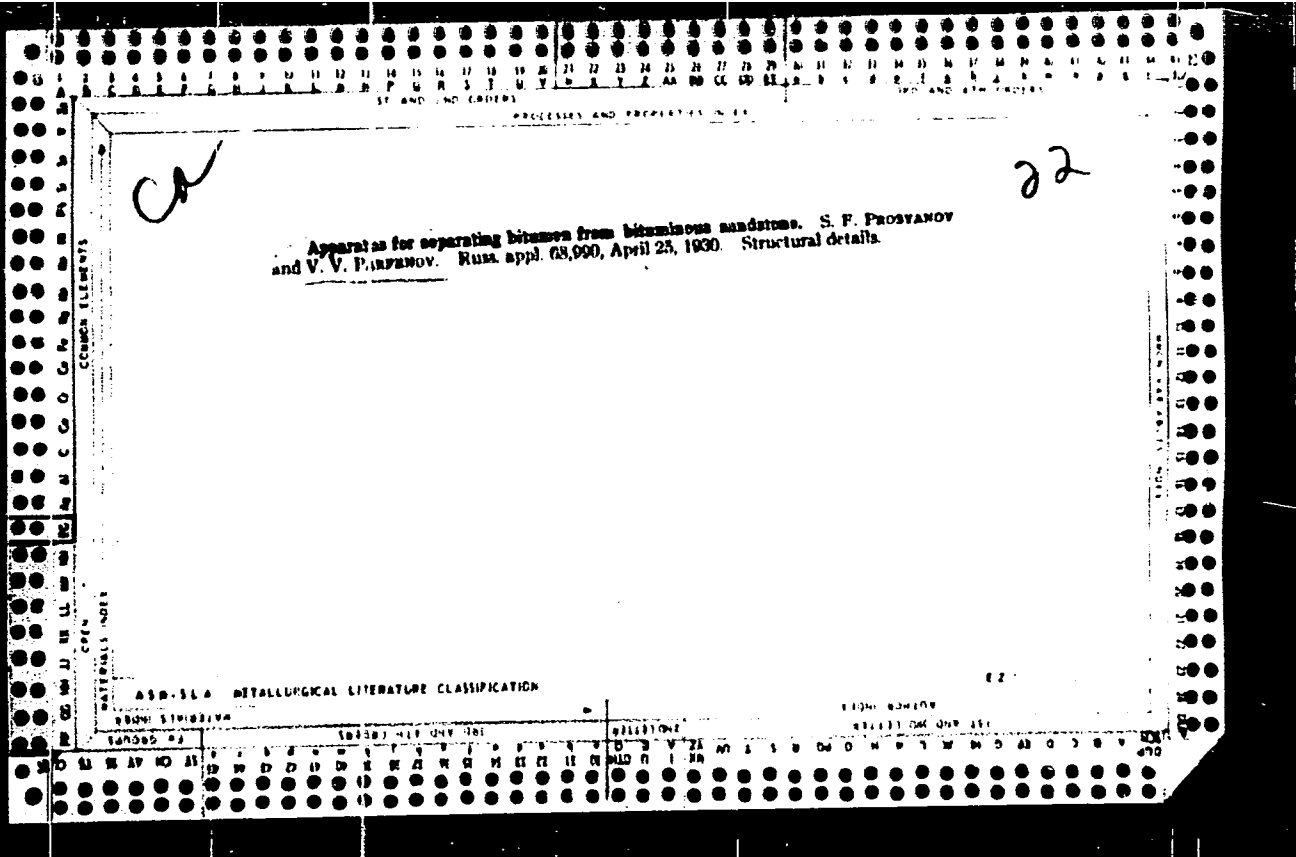
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Plants and Establishments

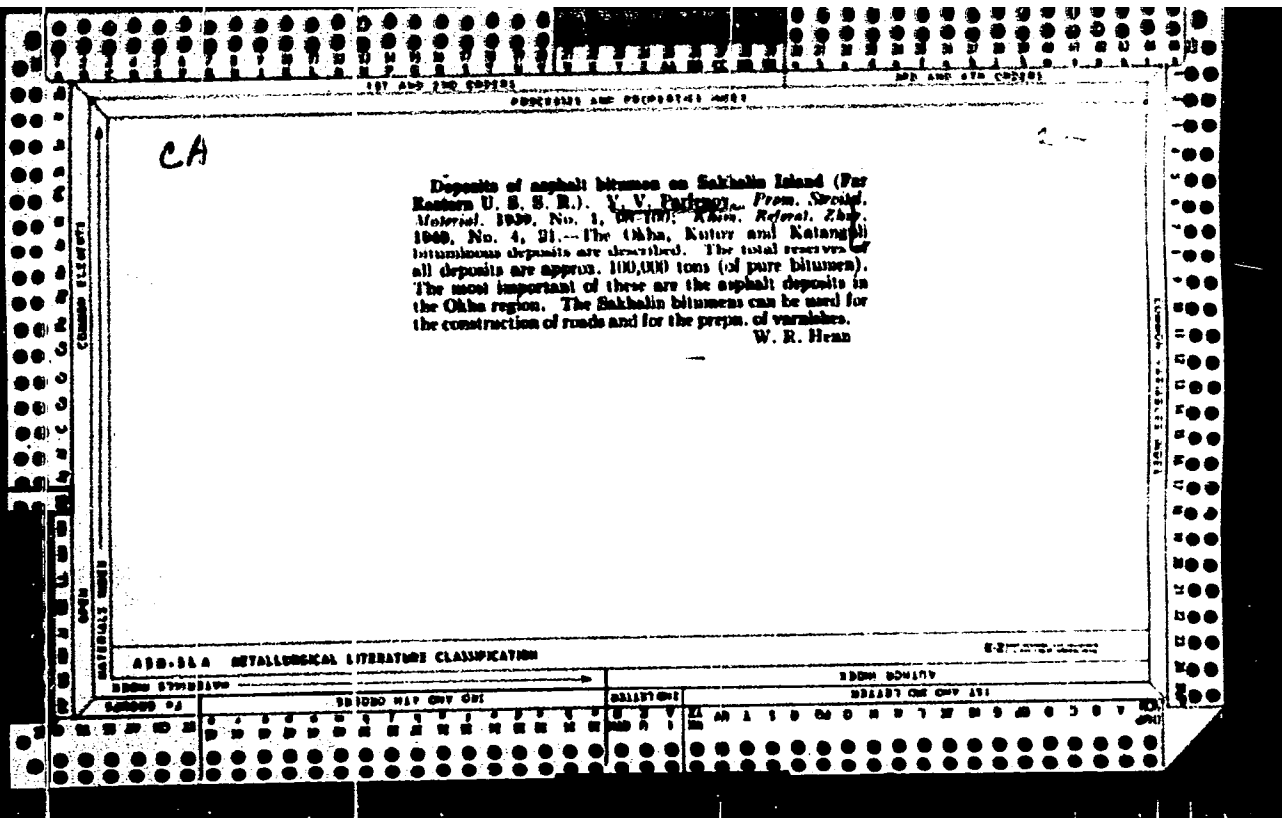
294

AVAILABLE: Library of Congress

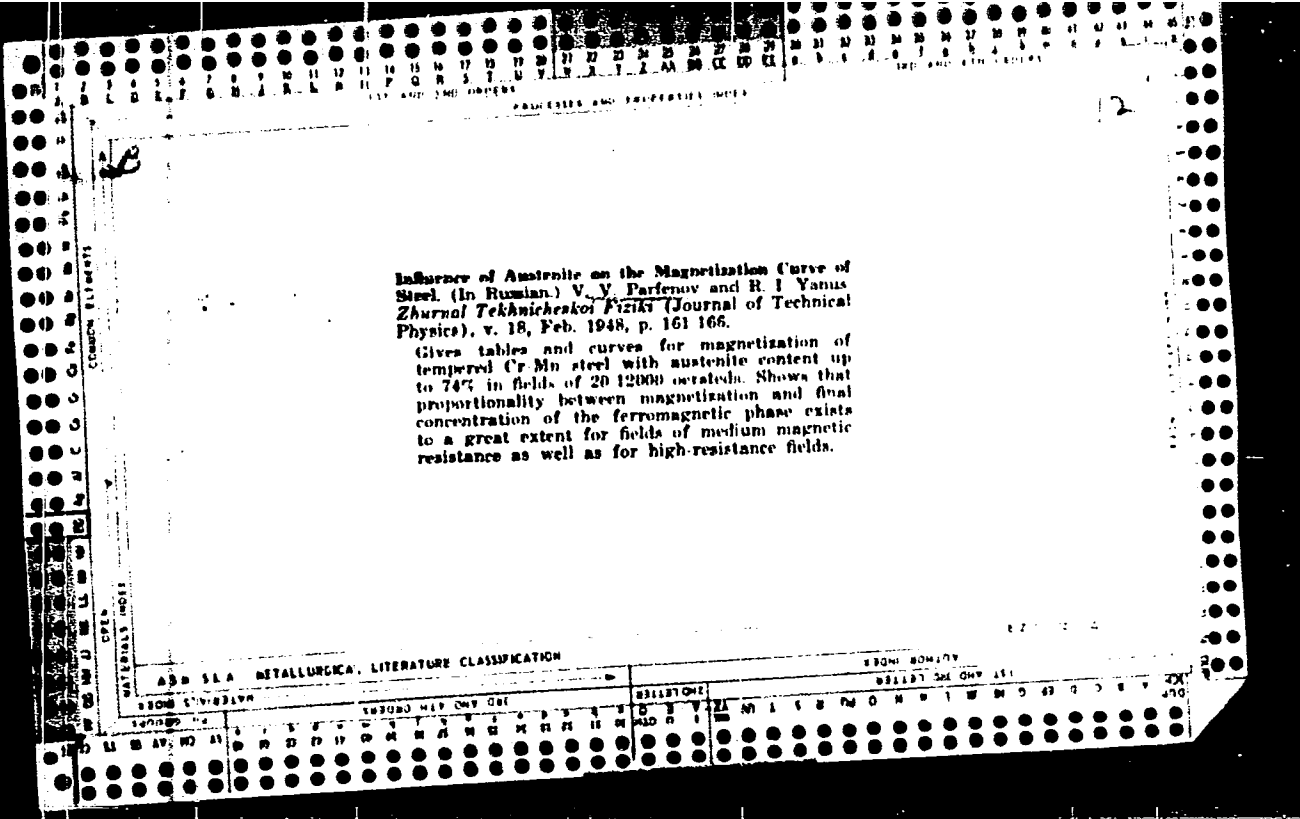
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6-1-59

Card 12/12









PA 195T101

PARFENOV, V.

USSR/Radio - Tensimeters  
Oscilloscopes

Sep 51

"A Cathode-Ray Oscillograph," V. Parfenov

"Radio" No 9, pp 44-48

Describes a cathode-ray oscillograph with a dc amplifier which, together with other instruments, was used by Parfenov as a tensimeter to measure and record mech stresses and deformations in building structures and machine parts subjected to static and dynamic loads.

195T101



PARFENOV, V. V., ABEL'S, V. R.

Thermoelectricity

Investigation of the temperature dependence of the Hall effect in electrolytic iron.  
Izv. AN SSSR Ser. fiz. 16, No. 5, 1952.

Monthly List of Russian Accessions, Library of Congress.  
June 1953. UNCL.

YANUS, R. I., PARFENOV, V. V.

Electromagnetism

Practicability of electromagnets for measuring the reverse sensitivity of ferromagnetic material in interne fields. Izv. AN SSSR. Ser. fiz. 16 No. 5, 1952.

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

CA

2

*Temperature dependence of the Hall effect in electrolytic iron* V. V. Parfenov and V. R. Abel's. *Doklady Akad. Nauk S.S.S.R.* 82, 877 (1952).—The dependence of the Hall e.m.f.  $E$  on the magnetization  $J$ , characteristic of ferromagnetic materials,  $E = R_H J / ib$ , where  $i = c.d.$ ,  $b =$  distance between the electrodes, and  $R_H =$  ferromagnetic Hall const., was tested on electrolytic Fe in the temp. range from 77 to 1053°K. At each temp., the dependency of  $E$  on  $J$  was found to be linear. In terms of the temp.,  $E$  passes through a max. near the Curie point  $\theta$ , and then falls sharply with further increasing  $T$ . The ferromagnetic  $R_H$  can be split, according to Kikoin (*C.A.* 31, 6870; 35, 5264) into a const. part  $R_0$  (depending on the external magnetic field) which is only very slightly temp.-dependent, and a strongly temp.-dependent part  $R_1$  due to magnetization.  $R_0$  is eliminated in the difference  $\Delta R = R_H - R_0$ , between the temps.  $T$  and  $\theta$ . By combination with data of the satn magnetization  $J_s$  at different temps., one finds the relation  $\Delta R = C(J_s - J_s^0)$ , i.e.  $R_1$  is a function of  $J_s$ . This is in agreement with the quantum theory of the Hall effect in ferromagnetics. N. Thou

PARFENOV, V. V.

*met*

217/104

669.1 : 669.24 : 538.2

3

Index  
Aeronauticus  
April 1954  
Metallurgy

The Influence of Plastic  
Deformation on the Shape of the  
Magnetization Curve of Iron and  
Nickel in the Region of High-  
Intensity Magnetic Fields

Dokl. Akad. Nauk  
93(3), 435-438  
1953

V. V. Parfenov

U.S.S.R.

An experimental investigation into the influence of plastic deformation in torsion and tension on the magnetization curves of iron and nickel in fields up to 10,000 Oersted, from which the fundamental laws and constants are derived. It is confirmed, that the existing magnetic anisotropy is conditioned by the crystalline anisotropy of the material. (Bibl. 11)

*Ural State Univ. Gorkiy*

PARFENOV, V.V.; SHUMKOV, Yu.V.

Investigation of the magnetic susceptibility of carbon steel in  
strong magnetic fields. Fiz. met. i metalloved. 1 no.3:434-440  
'55. (MIRA 9:6)

1.Ural'skiy gosudarstvennyy universitet  
(Steel--Magnetic properties)

PARFENOV, V.V.,

"Investigation of Magnetic Susceptibility in Alloys with Iron-Nickel Base in High Magnetic Fields" Sverdlovsk

Conference on Physics of Magnetic Phenomena,  
May 1956, Sverdlovsk, USSR

PARFENOV, V.

"Cleaning the Blades of Gas Turbines," by V. Parfenov and N. Chernykh, Grazdanskaya Aviatsiya, No 11, Nov 56, p 24

The development of intercrystalline microscopic fissures along the edges of the metal surface grains of jet engine gas turbine blades, with subsequent deeper penetration due to thermal and mechanical stresses, results in blade failures. The unsatisfactory results of removing the chrome and aluminum oxide film by other methods led to the development of a chemical reagent, R-77, which consists of 4.3% fluoroboric (fluoric) acid (sp wt, 1.34-1.4) and 19.2% nitric acid (sp wt, 1.3-1.4) in water. The compound formed by the action of the reagent can be easily cleaned with a hairbrush and a stream of water. Any flaws can then easily be detected with a binocular lens.

It is stated that R-77 has no effect on nonoxidizing metals. Blade stability is not reduced. However, blades made of EI-437 type alloys are negatively affected owing to the vigorous consumption of the reagent and prolonged pickling. The temperature of the reagent should be held to within 25-30°, and the pickling time should not exceed 40 minutes.

54M.1305

PARFENOV, V.V.

AUTHOR:

Parfenov, V.V.

48-9-25/26

TITLE:

An Investigation of the Magnetic Susceptibility of Solid Solutions on the Basis of Iron and Nickel (Issledovaniye magnitnoy vospriimchivosti tverdykh rastvorov na osnove zheleza i nikelya)

PERIODICAL:

Izvestiya AN SSSR Seriya Fizicheskaya, 1957, Vol. 21, Nr 9, pp. 1327-1333 (USSR)

ABSTRACT:

In this paper the magnetic susceptibility of solid solutions in the range of very strong magnetic fields was investigated at different temperatures. For the purpose of recording the curves of magnetization and susceptibility at room temperature, the methods described by the author in former publications (Izvestiya AN SSSR, Seriya Fizicheskaya, Vol. 16, p. 601, 1952, and Vol. 16, p. 611, 1952) were applied. The essential part of the measurements was conducted in fields up to 10,000 Oe. The examinations showed that the law of the approach of saturation is complied with sufficiently well. The constants contained in this law are caused by the differing magnetization processes and are essentially dependent upon the nature of the admicutre atoms. The investiagtions made it possible to give a judgement on the conclusions from quantum mechanics on the dependence of the susceptibility upon

Card 1/2



PARFENOV, V.V.

48-9-26/26

AUTHORS: Parfenov, V.V., Voroshilov, V.P.

TITLE: Note on the Influence of Elastic Deformations on the Susceptibility of a Para-Process ( Vliyanie uprugoy deformatsii na vospriimchivost' paraprotsessa)

PERIODICAL: Izvestiya AN SSSR Seriya Fizicheskaya, 1957, Vol. 21, Nr 9, pp. 1334 - 1336 (USSR)

ABSTRACT: In this paper preliminary experimental investigations on the influence of elastic deformation on the susceptibility of a para-process at a unidirectional dilatation were conducted. A molybdenum permalloy and a invar alloy were selected as samples. The utilization of these substances made it possible to investigate the problem under consideration in comparatively weak fields, where the modification of the magnetization is entirely dependent upon the para-process. Not noticeable modification of susceptibility was found in the substances under investigation under the influence of a unidirectional dilatation . The examination of the temperature dependence of the susceptibility confirmed the opinion, that the observed modifications of susceptibility are caused by the para-process in the range of field strength, which has

Card 1/2

PARFENOV, V.V.

Determining the extent of steel magnetization in strong magnetic fields. Zav.lab.23 no.2:211-215 '57. (MIRA 10:3)

1. Ural'skiy gosudarstvennyy universitet im. A.M. Ger'koge.  
(Steel--Magnetic properties) (Magnetic fields)

24.2200

1160 1164 1177  
21258

S/126/61/012/002/008/019  
E193/E483

AUTHORS: Parfenov, V.V. and Voroshilov, V.P.

TITLE: Investigation of the effect of uniaxial tension and compression in the elastic range on the saturating magnetization intensity and on susceptibility of the para-process of ferromagnetics

PERIODICAL: Fizika metallov i metallovedeniye, 1961, Vol.12, No.2, pp.240-248

TEXT: The effect of mechanical factors on the saturation magnetization  $I_s$  constitutes one of the more important problems of the modern theory of ferromagnetism. Following the findings of K.P.Belov (Ref.4: ZhTF, 1949, 19, 1032; DAN SSSR, 1948, 61, 807; ZhTF, 1949, 19, 661; ZhTF, 1949, 19, 348) who showed that, contrary to the generally accepted view  $I_s$  of a ferromagnetic is affected by uniaxial tension (even in the absence of phase transformations), the present authors had undertaken further study of this problem. The effect of uniaxial, elastic, both tensile and compressive strains on  $I_s$  of various ferromagnetics at 77 to 400°K was investigated, as well as the effect of these factors on the susceptibility of the para-process. In addition, the effect of  
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26558

S/126/61/012/002/008/019  
E193/E483

Investigation of the effect ...

intensity of magnetization caused by increasing the applied load to  $\sigma$ ; the graphs above and below the H axis relate to tensile and compressive strains, respectively, of specimens at 400°K (curves 1 and 5), 288°K (curves 2 and 4) and 77°K (curve 3). Using the linear portion of curves in Fig.2, the present authors constructed the  $\Delta I_s$  (Gauss) versus  $\sigma$  (kg/mm<sup>2</sup>) graphs for the 64% Fe - 36% Ni alloy; these are shown in Fig.3, where triangles and dots indicate results obtained under tensile stresses, circles and crosses indicating data obtained in compression; curves 1, 2 and 3 were obtained for specimens at 400, 288 and 77°K, respectively. Results, similar to those illustrated in Fig.2 and 3, were obtained for all other Fe-Ni alloys containing 32-40% Ni. The results of the other series of experiments are reproduced in Fig.5. Here,  $\Delta I_s$  is plotted against  $\sigma$  for the 64% Fe - 36% Ni alloy, tested at 77, 295 and 400°K (curves 1, 2 and 3 respectively) in the annealed condition (dots) and after plastic deformation of 7% (crosses) or 14% (triangles). The results obtained for the 70% Fe - 30% Ni alloy, tested under  $\sigma = 6$  kg/mm<sup>2</sup>, are reproduced in Fig.6, where  $\Delta I_s$  is plotted against the test temperature (°C), curves 1 - 6 relating to results obtained in fields of 315, 525, Card 3/9

Investigation of the effect ...

26558

S/126/61/012/002/008/019  
E193/E483

X

1050, 1575, 290 and 320 Oe, respectively. Other results obtained for this alloy, tested in a field  $H = 1050$  Oe, are shown in Fig.8 where  $\Delta I_s$  is plotted against  $\sigma$ , curves 1-7 relating to data obtained at 50, 34, 16, 70, 75, 81.5 and 101°C, respectively. The results of the present investigation proved conclusively that uniaxial elastic strains (both tensile and compressive) affect the magnitude of the saturation magnetization  $I_s$ , the resultant change being practically independent of the magnetic field strength. This effect was observed at all temperatures below the Curie point,  $\Delta I_s$  (in the case of alloys containing 32 to 40% Ni) being proportional to the applied load. The results of measurements, carried out in fields of up to 3500 Oe on Fe-Ni alloys, ordered Ni<sub>3</sub>Mn alloy and other materials, showed that the susceptibility of the para-process is unaffected by elastic strains (both tensile and compressive) even at temperatures approaching the Curie point. The change of the interatomic distance, caused by elastic strains, is bound to affect the energy of interaction between electrons participating in ferromagnetic phenomena, and this provides a qualitative explanation of the observed variation of the saturating magnetization intensity.

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Investigation of the effect ...

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S/126/61/012/002/008/019  
E193/E483

At present, it is not possible quantitatively to determine the effect of the mechanical factors on  $\Delta I$  and on its temperature dependence, or to formulate a well-substantiated explanation of the fact that  $\Delta I_s$  is independent of  $H$  and that the susceptibility of the para-process is not affected by  $\sigma$ . The same applies to the fact that, in the case of the Ni<sub>3</sub>Mn alloy characterized by high-volume magnetostriction and susceptibility of the para-process, the saturating magnetization intensity is not affected by elastic strains. The most simple explanation of the anomalies, observed in the alloys of the Invar type, can be provided on the basis of a postulate of the existence of "latent" antiferromagnetism (Ref.9: Kondorskiy, Y.I. ZhETF, 1959, 37, No.6 (12), 1819), although there may be some other contributing factors such as the variation of the constitution of the alloy during elastic deformation. There are 8 figures and 9 references: 7 Soviet and 2 non-Soviet. The reference to an English language publication reads as follows: Patrick L. Phys. Rev., 1954, 93, 384. X

ASSOCIATION: Ural'skiy gosudarstvennyy universitet im. A.M.Gor'kogo  
(Ural State University imeni A.M.Gor'kiy)

Card 5/9

18 8100  
24 7000

36592  
S/126/62/013/003/003/023  
E039/E135

**AUTHORS:** Parfenov, V.V., and Voroshilov, V.P.

**TITLE:** The process of magnetisation of ferromagnetics in the region of high magnetic fields.  
I. The influence of elastic and plastic deformation on the law governing the approach to magnetic saturation

**PERIODICAL:** Fizika metallov i metallovedeniye, v.13, no.3, 1962, 340-350

**TEXT:** Susceptibility measurements were made on nickel and permalloy when under loads of up to 22.8 kg/mm<sup>2</sup> and after their removal. The samples were 300 mm long and 2.5-5.0 mm in diameter for magnetising fields up to 3500 oersted, and 100 mm long and 6 mm diameter for fields up to 10 000 oersted. These fields were supplied by an oil-cooled solenoid. The experimental method is described in earlier papers. It is shown that, in the region where true magnetisation is not playing an essential role, the susceptibility is changed by elastic deformation of the samples and depends on the change in elastic  
Card 1/3

The process of magnetisation of ... S/126/62/013/003/003/023  
E039/E135  
strain in the crystal lattice. For high magnetic fields the  
change in differential susceptibility with field is given by:

$$\chi = \frac{b}{H^2} + \frac{a}{H^3} + \dots + \chi_p (H, T) \quad (1)$$

where a and b are coefficients connected with the change in magnetisation under the influence of an external magnetic field. In the case of plastic deformation a increased with deformation up to the limit measured (22.8 kg/mm<sup>2</sup>). Good agreement is obtained between experimental and theoretical values of a. Values of the coefficient b were also determined. The coefficients a and b should change equally under the influence of plastic deformation, hence b also should be proportional to the plastic deformation. The experimental results do not confirm this and it is not possible to give a clear explanation of the observed approach to saturation on the basis of the results obtained. The measurements were all taken at 278-290 °K. It is possible that a comparison with  
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The process of magnetisation of ... S/126/62/013/003/003/023  
E039/E135

measurements at different temperatures may help to clarify the  
problem.

There are 8 figures and 1 table.

ASSOCIATION: Ural'skiy gosudarstvennyy universitet imeni  
A.M. Gor'kogo  
(Ural State University imeni A.M. Gor'kiy)

SUBMITTED: Initially, April 10, 1961;  
After revision, August 16, 1961.

Card 3/3

37695  
S/126/62/013/004/002/022  
E039/E435

188100  
AUTHORS:

Parfenov, V.V., Voroshilov, V.P.

TITLE:

Magnetization processes for ferromagnetics in the region of high magnetic fields. II The influence of elastic and plastic deformation on the law of approach to magnetic saturation at various temperatures

PERIODICAL: Fizika metallov i metallovedeniye, v.13, no.4, 1962, 502-511

TEXT: According to experimental results described in the paper the law of approach to saturation of magnetization can be presented in the form

$$\chi = aH^{-3} + bH^{-2} + \chi'_p + \frac{c}{H^{1/2}}$$

where  $\chi'_p$  is the constant part of the susceptibility. In this region of magnetic fields, where the terms containing the coefficients a and b are not significant, changes in the magnetization path depend on essential paraproceses and the

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Magnetization processes ...

S/126/62/013/004/002/022  
E039/E435

experimental values of susceptibility conform to the following law

$$\chi = \chi_p' + \frac{c}{H^{1/2}}$$

where  $\chi_p'$  depends only on temperature. This law is valid for a wide range of temperatures but not near to the Curie point. The change in susceptibility under the influence of elastic deformation (uniaxial elongation and compression) at different temperatures depends on changes in the elastic stress conditions of the crystal lattice. In the case of nickel its natural crystalline anisotropy is increased when under load but the coefficient  $a$  is not reduced. The theoretical formulae connecting  $a$  with the values of the external and internal strains  $\sigma$  and  $\sigma_i$ , characteristic of the mechanical condition of the crystal lattice under load and after its removal, show good agreement with experimental data for all the investigated materials at different temperatures. The coefficient  $b$  is small for the normal and loaded conditions. It is shown that the greater the

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Magnetization processes ...

S/126/62/013/004/002/022  
E039/E435

load producing plastic deformation the larger the change in  $b$  observed after the removal of the load. The value of  $b$  is weakly dependent on temperature. The given law is valid for Ni, Fe, Permalloy, Ni<sub>3</sub>Mn and some Fe-Ni alloys related to the invar group. These materials were investigated in the temperature range 77 to 400°K and for specific loadings up to 22.8 kg/mm<sup>2</sup>. There are 9 figures and 1 table.

ASSOCIATION: Ural'skiy gosudarstvennyy universitet im. A.M.Gor'kogo  
(Ural State University imeni A.M.Gor'kiy)

SUBMITTED: April 10, 1961 (initially)  
July 1, 1961 (after revision)

Card 3/3

PARFENOV, V. V.; LOBANOV, Yu. A.; SHIMOLIN, L. V.

Investigating the law of magnetization approaching saturation  
in specimens made of fine ferromagnetic powders. Fiz. met. i  
metalloved. 14 no.4:503-511 0 '62. (MIRA 15:10)

1. Ural'skiy gosudarstvennyy universitet imeni A. M. Gor'kogo.

(Magnetization) (Metal powders—Magnetic properties)

PARFENOV, V.V.

Ferromagnetic material magnetization processes in the range of high magnetic fields. Fiz. met. i metalloved. 16 no.6:827-836 D '63.  
(MIRA 17:2)

1. Ural'skiy gosudarstvennyy universitet imeni A.M.Gor'kogo.

ACC NR: AP7005132

SOURCE CODE: UR/0126/66/022/004/0563/0568

AUTHOR: Parfenov, V. V.; Mulyukov, Kh. Ya.; Kuranov, A. A.; Klyuyeva, I. B.

ORG: Ural State University im. A. M. Gor'kiy (Ural'skiy gosuniversitet)

TITLE: Effect of dimensions of the specimen on the formation of magnetic properties in the cobalt-platinum alloy

SOURCE: Fizika metallov i metallovedeniye, v. 22, no. 4, 1966, 563-568

TOPIC TAGS: cobalt alloy, platinum alloy, magnetic coercive force, magnetic susceptibility

ABSTRACT: When in high-coercive state, Co-Pt alloys form a fine-disperse two-phase system, which accounts for their high coercive force and magnetic energy. The principal factors in the effect of such a structure of the alloy on its magnetic properties must be: the nature of the phases formed, their amount, shape and pattern of distribution. If that is so, then the variation in the magnetic characteristics of these alloys during the various regimes of their heat treatment must follow the same laws as in the case of pressed ferromagnetic powders with change in their nature, size, packing density, etc. To further elucidate this nature of the magnetic properties of these alloys, the authors investigated the effect of sheet (1 to  $10^{-3}$  mm).

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UDC: 546.3-19'73'92:538.22

ACC NR: AP7005132

thickness and wire diameter (diameter 1 to  $2 \cdot 10^{-2}$  mm) on the processes of magnetization and magnetization reversal following various types of thermomechanical treatment (quenching, tempering at 600, 630, 650, 700 and 750°C for 1 hr, rolling). The principal magnetic characteristics were measured in an electromagnet in fields of up to 20,000 oe at 77 and 300°K with the aid of a high-sensitivity magnetometer. Findings: following quenching coercive force is low ( $\sim 10$  oe) and magnetization saturation is maximal ( $\sim 720$  gauss). The smaller the thickness of the specimen the higher the coercive force is, and the lower the initial susceptibility is. With increase in tempering temperature coercive force initially increases until it reaches a peak ( $\sim 630$ – $680$ °C) after which it begins to decrease; for initial susceptibility an opposite pattern is observed. On the other hand, magnetization saturation steadily decreases with increase in tempering temperature. In specimens whose thickness is reduced by means of cold grinding or etching from 1 mm to  $5 \cdot 10^{-2}$  mm (i. e. with conversion from three-dimensional to two- and one-dimensional cases) coercive force decreases and initial susceptibility increases. Thus the size of specimens (on transition from three-dimensional specimens to two- and one-dimensional cases) markedly affects the formation of magnetic properties of the Co-Pt alloy. It is presumed that the decrease in coercive force with decrease in thickness following optimal treatment is associated with the change in the dispersity of particles and in their magnetic interaction. "In conclusion the authors wish to express their appreciation to N. I. Solov'yev for preparing the specimens." Orig. art. has: 6 figures.

SUB CODE: 20, 13/ SUBM DATE: 14Sept65/ ORIG REF: 002/ OTH REF: 005

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L 8445-65 EWG(j)/EWG(r)/EWT(1)/A/AR/EWT(m)/FS(r)-3/K/EWG(y)/EWG(a)/EWG(c) Pe-5/  
 Pa-h/Pb-h AFETB/AFTC(b)/AFTC(a)/AEDC(a)/SSD/AMI/AFMD(c)/ASD(a)-5/AFWL/ESD(s1)  
 DD

ACCESSION NR: AP4043504

S/0293/64/002/004/0648/0653

AUTHOR: Parfenov, G. P.

TITLE: The development of crossing over in male *Drosophila* under the influence of vibration, acceleration, and gamma radiation B

SOURCE: Kosmicheskiye issledovaniya, v. 2, no. 4, 1964, 648-653

TOPIC TAGS: space flight, *Drosophila*, genetics, vibration, acceleration, gamma radiation

ABSTRACT: Earthside experiments were conducted on male fruit flies to determine the individual and combined influence of radiation, acceleration, and vibration on the incidence of crossing over. Crossing over was detected in the second chromosome of hybrid males obtained from crossing Donodedova-32 (wild type) females with male black, cinnamon, vestigial recessives. The greatest incidence of crossing over was observed on the 9th day following 1000--2000 r of gamma radiation and when sex cells were in the meiotic stage. Vibration with an amplitude of 4 mm at a frequency of 70 cps and a duration of 2--4 hours induced crossing over which was most noticeable in proximal se-

Card 1/2

L 8445-65

ACCESSION NR: AF4043504

tions of the chromosome. Acceleration (4000 g on a biochemical centrifuge with an arm radius of 15 cm) had no effect on crossing over. Vibration decreased the subsequent action of gamma radiation on crossing over while acceleration increased the effect of radiation. A summary effect was produced when films were exposed to both vibration and acceleration following gamma irradiation. Orig. art. has: 1 figure and 4 tables.

ASSOCIATION: none

SUBMITTED: 21Dec63

ATD PRESS: 3097

ENCL: 00

RUN CODE: LS PH

NO. OF REPRO: 004

OTHER: 004

FOMINYKH, F.D.; TOMILIN, N.F.; PARFENOV, V.V.

Contactless phase-shifting semiconductor device. Nauch. zap.  
KNIUI no.15:5-10 '64. (MIRA 18:8)

BYR'KA, V.F.; KRAUS, E.G.; TOMILIN, N.F.; PARFENOV, V.V.; FOMINYKH, F.D.

Experimental stoping cutter-loader with a regulated d.c.  
drive. Nauch. trudy KNIUI no.15:23-40 '64. (MIRA 18:8)

KUPCHENKO, L.D.; PARFENOV, V.V.

Use of latexes as film-forming agents in coating dyes for leather.  
Kozh.-obuv.prom. 6 no.3:28-30 Mr '64. (MIRA 17:4)

PARFENOV, V.V.; LOBASTOV, Yu.P.

Magnetization processes of ferromagnetic materials in the region of strong magnetic fields. Part 3: Investigating, on single crystals, the law of magnetisation approaching saturation. Fiz. met. i metalloved. 16 no.3:334-342 S '63. (MIRA 16:11)

1. Ural'skiy gosudarstvennyy universitet imeni A.M.Gor'kogo.

ACCESSION NR: AP4009375

S/0126/63/016/006/0827/0836

AUTHOR: Parfenov, V. V.

TITLE: Processes of ferromagnetic magnetization in high magnetic fields. 4.  
Study of the law governing magnetization approach to saturation in alloys

SOURCE: Fizika metallov i metallovedeniye, v. 16, 1963, 827-836

TOPIC TAGS: magnetic field, magnetization, ferromagnetic magnetization, magnetization saturation, ferromagnetic heterogeneous alloys, structure transformation effect, phase transformation effect

ABSTRACT: The effect of structure and phase transformations on the alignment of the magnetization curve in magnetic fields up to 10 000 e was investigated. Measurements at room temperature were made in an electromagnet. The samples were cylindrical, 12 mm long and 6 mm in diameter. At higher temperatures (400 to 77K), the measurements were taken in an oil-cooled solenoid (magnetic fields up to 4500 e). In the latter case the samples were shaped as ellipsoids of revolution. The relation of differential susceptibility  $\chi$  to the field ( $H^{-2}$ ) is shown in Fig. 1 of the Enclosure. This relationship was sustained by the results obtained for heterogeneous alloys with ferromagnetic and nonmagnetic phase concentrations varying within

Card

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ACCESSION NR: AP4009375

broed limits. Forces counteracting the achievement of the saturation state in heterogeneous alloys were introduced by the effect of the internal fields (disturbances of magnetization homogeneity). Orig. art. has: 2 tables, 7 figures, and 2 formulas.

ASSOCIATION: Ural'skiy gosuniversitet im. A. M. Gor'kogo (Ural State University)

SUBMITTED: 08Jan63

DATE ACQ: 03Feb64

ENCL: 01

SUB CODE: ML, PH

NO REF SOV: 021

OTHER: 008

Card

2/72



PARFENOV, V.V.; VOROSHILOV, V.P.

Ferromagnetic material magnetization processes in the range of high magnetic fields. Part 2: Effect of elastic and plastic deformations on the law of magnetization nearing saturation at various temperatures. Fiz. met. i metalloved. 13 no.4:502-511 Ap '62. (MIRA 16:5)

1. Ural'skiy gosudarstvennyy universitet imeni A.M.Gor'kogo.  
(Deformations (Mechanics)) (Ferromagnetism)

~~PARFENOV, I.~~

Premiums exceed savings. Sots. trud no.4:128-129 Ap '57.

(MIRA 10:6)

1. Kachal'nik planovogo otdela Kur'yanskoyskoy stantsii aeratsii.  
(Sewage--Purification) (Bonus system)

PARFENOV, Ye.A.

Measures worked out by the Committee for Fulfilling Decisions  
of the November 1962 Plenum of the Central Committee of the  
CPSU. Biul.tekh.-ekon.inform.Gos.nauch.-issl.inst.nauch. i  
tekh.inform. no.3:68-71 '63. (MIRA 16:4)

(Russia--Economic policy)

~~GUREVICH, Ya. D.~~ PARFENOV, Ye. I.

GUREVICH, Ya. D.; SMIRNOV, A. S.; LIVSHITS, Z. I.; LOSEV, M. T.; BALANOVSKIY, S. A.;  
UDYANSKIY, N. Ya.; MURAV'YEV, V. M.; AMIYAN, V. A.; LOZGACHEV, P. M.;  
OPROSIMOV, V. S.; POPOV, S. S.; MATSKIN, L. A.; RATUSH, P. P.; PARFENOV,  
Ye. I.; DUBROVINA, N. D., vedushchiy red.; MUKHINA, E. A., tekhn. red.

[Soviet petroleum industry] Neftianaya promyshlennost' SSSR.  
Moskva, Gos. nauchno-tekhn. izd-vo neft. i gorno-toplivnoi lit-ry,  
1958. 330 p. (MIRA 11:3)  
(Petroleum industry)

ZUSIN, S.I., inzh.; PARFENOV, Ye.N., inzh.

Measures for saving fuel oil. Energetik 6 no.9:10-12 5 '58.  
(MIRA 11:11)

(Protroleum as fuel)

PARFENOV, Ye. N.

SOV-91-58-9-4/29

AUTHOR: Zusin, S.I. and Parfenov, Ye.N.; Engineers

TITLE: Measures for Economizing on Firing Mazut (Meropriyatiya po ekonomii rastopchnogo mazuta)

PERIODICAL: Energetik. 1958, Nr 9, pp 10-12 (USSR)

ABSTRACT: To ensure the proper supply of air to the firing chamber, necessary for the economical burning of mazut during the firing of a boiler, the draft fan may be switched on. Regulations, however, forbid this before the temperature of the exhaust gases has reached 120°C, for fear of causing gas-corrosion at the cold end of the air-heater. A study of old air-heaters, removed after 25 years service, revealed no trace of gas corrosion. The author concludes that for firing a boiler which has been on reserve for less than 24 hours, the fan may be switched on at the beginning of the process with resultant saving in mazut. Where a boiler is being repeatedly shut off on reserve, rapid cooling takes place through natural draft. To prevent this, a swinging valve can be installed in the inlet of the flue-gas pump, automatically cutting off any natural draft. When firing from cold, after a long stoppage for general maintenance or major re-

Card 1/2

Measures for Economizing on Firing Mazut

SOV-91-58-9-4/29

pairs, a metal cone may be fitted into the nozzle of the burner to assist firing, instead of using an oil flare. The cone is heated by the burner flame and causes immediate reignition if the burner flame is extinguished due to pulsations in the mazut supply (Figure 3). An even better stabilizing device is shown in Figure 4 and consists of a perforated metal cap designed to fit over the end of the burner nozzle. There are 4 diagrams.

1. Boilers--Operation
2. Fuels--Economic aspects

Card 2/2

FILIPPOV, A.M.; ~~PARFENOV, Yu. A.~~; MOROZOVA, A.D.; TOMCHIN, B.Z.; SHAFRAN, B.I.,  
otv. red.; CHSNOKOVA, T.V., red.; SLUTSKIN, A.A., tekhn.  
red.

[Handbook on electric measurements in municipal telephone  
lines] Rukovodstvo po elektricheskim izmereniam linii go-  
rodskikh telefonnykh setei. Moskva, Sviaz'izdat, 1962. 120 p.  
(MIRA 16:6)

1. Russia (1923- U.S.S.R.) Upravleniye mestnoy telefonnoy  
svyazi i radiofikatsii. 2. Sotrudniki lineyno-kabel'noy labo-  
ratorii Nauchno-issledovatel'skogo instituta gorodskoy i sel'skoy  
telefonnoy svyazi Ministerstva svyazi SSSR (for Parfenov, Morozova,  
Filipov). (Telephone lines)  
(Electric measurements--Handbooks, manuals, etc.)



31845  
S/194/61/000/010/082/082  
D271/D301

6,7000

AUTHORS:

Parfenov, Yu.A., Kopacheva, Yu.I., Goryachev, V.A.,  
Minenko, Yu.G. and Mosolova, G.K.

TITLE:

Apparatus for automatic measurement of crosstalk  
attenuation

PERIODICAL:

Referativnyy zhurnal. Avtomatika i radioelektronika,  
no. 10, 1961, 2-3, abstract 10 L10 (Tr. nauchno-  
tekhn. konferentsii Leningr. elektrotekhn. in-ta  
svyazi, no. 1, L., 1961, 133-141)

TEXT:

Measurement of near-end crosstalk attenuation in  
multi-pair local telephone cables is at present both labor-consum-  
ing and imperfect. In order to reduce time waste and improve the  
supervision of the condition of local cables, an apparatus was deve-  
loped for automatic measurement of crosstalk attenuation which per-  
mits automatic detection of low crosstalk attenuation pairs. The  
capacity of the equipment is 200 x 2. The equipment is composed of:

Card 1/2

PARFENOV, Yu.A.

Calculation of the effect of remote control and telemetry circuits  
on telephone lines in a common cable. Sbor. trud. NIIIS no.11:146-1 1  
'63. (IITM 17:9)

PARFENOV, Yu.A.; MGRICZVA, A.D.

Electromagnetic couplings between circuits in short TG cable sections.  
Sbor. trud. NIITS no.11:152-162 '63. (MIRA 17:9)

REMARKS: [Illegible]

[Illegible text]

[Illegible text]

S/026/60/000/03/025/047  
D001/D006

21(0)

AUTHORS: Rodin, S.S., and Parfenov, Yu.D.

TITLE: The Peaceful Atom in Action

PERIODICAL: Priroda, 1960, Nr 3, pp 107 - 109 (USSR)

ABSTRACT: A conference on the peaceful applications of atomic energy was convened in Tashkent at the end of 1959 by the Akademiya nauk Uzbekskoy SSR (Academy of Sciences of the Uzbekskaya SSR) and the republic's Nauchno-tekhnicheskiy komitet Soveta Ministrov (Scientific and Technical Committee of the Council of Ministers). Over 1,000 scientists and specialists participated and more than 300 papers were read at the 2 plenary and 40 ordinary sessions - 50% of them by Uzbek scientists. The sessions were devoted to research on nuclear physics, radiation chemistry, the uses of radio-isotopes in industry, geology, biology, medicine and agriculture. The following reports were heard: the development prospects of scientific research by U.A. Arifov, Director of the Institut yadernoy fiziki (Nuclear Physics Institute)



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S/026/60/000/03/025/047  
D001/D006

The Peaceful Atom in Action


of the AS UzSSR; prospects for the peaceful utilization of atomic energy in the USSR by V.I. Sinitsyn, representative of Glavatom at the Sovet Ministrov SSSR (Council of Ministers of the USSR); the production of radioactive isotopes in the USSR by G.M. Fradkin; the results of the work of Uzbek scientists on the effect of radiation on solids and liquids by S.V. Starodubtsev, vice-president of the AS UzSSR; "Modern Methods of Radiochemistry" by A.K. Lavrukhina who discussed the work of the Institute of Geochemistry and Analytic Chemistry at the Ob'yedinennyy institut yadernykh issledovaniy (Joint Nuclear Research Institute) in Dubna; the adsorption of alkali- and rare earth elements in chernozem by the marked atom method by E.A. Chuveleva, K.V. Chmutov and R.P. Nazarov. Other papers and reports dealt with:

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S/026/60/000/03/025/047  
D001/D006

The Peaceful Atom in Action

research into radio chemical processes; the effect of ionizing radiation on matter; the radio chemical method of obtaining highly active metallic catalysts; the effect of radiation on various polymers; the influence of gamma-radiation on the composition and physico-chemical properties of different components of cotton seed; the radiochemical conversion of matter in aqueous solutions; methods of obtaining pure radioactive isotopes; the state of micro-quantities of radio-elements in solutions; the use of radioactive iodine to diagnose and cure functional disorders of the thyroid gland, to determine its speed of accumulation in cases of gastritis and to diagnose brain tumors; the use of radio-isotopes to study the circulation of blood and lymph and introduce "marked"



Card 3/6

S, '026/60/000/03/025/047  
D001/D006

The Peaceful Atom in Action

medicines into the organism; the effect of radioactive vapours at Khodzhi-Obirgam spa on the human organism; the functional change of different systems, organs and tissues under the influence of ionizing radiation; the use of radio-isotopes in treating tumors of the mouth, throat, nasopharynx, etc., and experimenting on living organisms; radio-isotopes in plant cultivation; the properties of chlorophyll biosynthesis and destruction by radioactivity of the cycle in plant organisms; the transmigration of mineral matter in the nourishment of plants; the effect of small doses of radiation on the growth, development and fertility of cotton, mulberry-trees, etc; the problems of using radiation in cattle-breeding and veterinary surgery. The participants in the conference inspected the recently built reactor.

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S/026/60/000/03/025/047  
D001/D006

The Peaceful Atom in Action

Apart from the new reactor, the Uzbek Nuclear Physics Institute is equipped with a complex of fast-neutron generators, a powerful cobalt gamma-radiation installation and specially equipped physical and radio-chemical buildings. A cyclotron is under construction. In its short existence the Institute has performed much valuable research. One of its contributions is the discovery that gamma-radiation is excellent for preserving the cocoon of the mulberry silk-worm. Instruments for automating labor-wasting production-quality control-processes and production regulating processes evolved by the Institute are already in use at enterprises in Tashkent, Chirchik and Ammalyk. Radiation methods are also being used to solve the problems of supplying the virgin

Card 5/6

S/026/60/000/03/025/047  
D001/D006

The Peaceful Atom in Action

soils of the Golodnaya Steppe and Central  
Fergana with water.

ASSOCIATION: Institut geokhimii i analiticheskoy khimii  
Akademii nauk SSSR (Institute of Geochemistry  
and Analytic Chemistry of the AS USSR) -  
Rodin. Ministerstvo zdravookhraneniya RSFSR  
(RSFSR Ministry of Health / Moscow) Parfenov. ✓

Card 6/6

PARFENOV, Yu.D.

Transfer of strontium from the mother to the fetus. Med.rad. 5  
no.10:75-80 '60. (MIRA 14:2)

(STRONTIUM METABOLISM)

(PLACENTA)

PARFENOV, Yu.D.

Metabolism of Sr<sup>90</sup> in the skeleton of dogs at remote periods.  
Med. rad. 5 no.12:43-47 '60. (MIRA 14:2)  
(STRONTIUM--ISOTOPES) (BONES)  
(RADIATION SICKNESS)

ZAKUTINSKIY, David Iosifovich; PARFENOV, Yuriy Dionisovich;  
SELIVANOVA, Lidiya Nikolayevna; LYASS, F.M., red.;  
PETROVA, N.K., tekhn. red.

[Manual on the toxicology of radioactive isotopes] Spravochnik  
po toksikologii radioaktivnykh izotopov. Moskva, Medgiz,  
1962. 115 p. (MIRA 15:8)

(ISOTOPES--TOXICOLOGY)

S/205/62/002/005/003/017  
D268/D308

AUTHORS: Duzhenkova, N.A., Parfenov, Yu.D., Savich, A.V., and Yartsev, Ye.I.

TITLE: Radiochemical conversions of aqueous solutions of tryptophan

PERIODICAL: Radiobiologiya, v. 2, no. 5, 1962, 662 - 666.

TEXT: An aqueous solution of Soviet dl-tryptophan ( $5 \times 10^{-4}$  M) diluted to  $2.5 \times 10^{-4}$  M in each of 3 media and exposed to  $Co^{60}$  gamma radiation at 300 rad/min was used to determine the relationship of some tryptophan radiolytic products (ammonia, anthranilic acids, and kynurenine) to concentration and pH. Also studied were the effects of the protective cysteine hydrochloride and the sensitizing  $Na_2S_2O_8$  on tryptophan radiolysis. The yield of radiochemical decomposition products was markedly affected by the pH of the solution. Maximum amino acid resistance in neutral medium was at pH 5.89. The quantity of anthranilic acids and kynurenine formed at the disruption of the indole ring increased with enhanced alkalinity of the solution. ✓

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Radiochemical conversions of ...

S/205/62/002/005/003/017  
D268/D308

The protective effect of cysteine hydrochloride was determined at pH 2.7 and 11 and was also found markedly dependent on the pH of the medium, being more pronounced in acid than in alkaline media, showing that cysteine acts as an acceptor of H and HO<sub>2</sub> radicals. There are 5 figures.

SUBMITTED: March 2, 1962

✓

Card 2/2

MEL'NIKOV, V. V.; LITVINOV, N. N.; PARFENOV, Yu. D.

Some new data relative to the blastomogenic action of Sr<sup>90</sup>.  
Vop. onk. 8 no.7:10-14 '62. (MIRA 15:7)

1. AMN SSSR (rukoviteli raboty - deystv. chl. AMN SSSR, prof.  
N. A. Krayevskiy, prof. D. I. Zakutinskiy)

(STRONTIUM—ISOTOPES) (CARCINOGENS)



VOROZHEYKINA, T.V.; PARFENOV, Yu.D.; ZAKUTINSKIY, D.I., prof. nauchnyy rukovoditel'

Placental transfer of strontium-90 ( $Sr^{90}$ ). Biul. eksp. biol. i med. 54 no.8:96-100 Ag '62. (MIRA 17:11)

1. Predstavlena deystvitel'nym chlenom AMN SSSR A.V. Lebedinskim.

ACCESSION NR: AT5006114

S/0000/64/000/000/0124/0130

AUTHOR: Burykina, L. N.; Parfenov, Yu. D.

TITLE: Passage of strontium-90 from mother to offspring in dogs under conditions of chronic uptake

SOURCE: Raspredeleniye, biologicheskoye deystviye, uskoreniye vyvedeniya radioaktivnykh izotopov (Distribution, biological effect, acceleration of the excretion of radioactive isotopes); sbornik rabot. Moscow, Izd-vo Meditsina, 1964, 124-130

TOPIC TAGS: strontium-90, radioisotope, mineral metabolism, bone, placenta, pregnancy, radioactivity

ABSTRACT: Seven mature female dogs received 0.002  $\mu\text{C}/\text{kg}$ , 0.2  $\mu\text{C}/\text{kg}$ , or 0.2  $\mu\text{C}/\text{kg}$  of  $\text{Sr}^{90}$  daily with food over a long period. At various times during the experiment they were mated, and 19-41 months after they began to receive the isotope, they produced offspring. Administration of the isotope continued throughout pregnancy and lactation. The amount of  $\text{Sr}^{90}$  accumulating in the mother's skeleton reached a maximum 11-17 months after the start of the experiment and remained constant thereafter. Thus, the puppies were born at a time when the level of radioactivity in their mothers' skeletons remained unchanged. The  $\text{Sr}^{90}$  concentration was found to

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ACCESSION NR: AT5005114

be twice as high in the skeleton of the puppy as in that of the mother. The maximum concentration during postembryonal development was 4 times higher than in the fetus. The results of the experiment show that puppies produced and suckled by mothers who regularly received Sr<sup>90</sup> with food accumulated disturbingly large amounts of radioactivity. Table 1 summarizes earlier investigations on rats and rabbits. Orig. art. has 6 tables.

ASSOCIATION: none

SUBMITTED: 10Apr64

ENCL:

SUB.CODE: LS

NO REF SOV: 000

OTHER: 000

Card 2/2

PARFENOV, Yu.D.; YUSUPOV, A.A.; ZAKUTINSKIY, D.I., nauchnyy rukovoditel'  
raboty

Passage of Sr<sup>90</sup> and Ca<sup>45</sup> through the placenta in rats. Biul. eksp.  
biol. i med. 57 no.3:67-70 Mr '64.

(MIRA 17:11)

1. Predstavlena deystvitel'nym chlenom AMN SSSR A.V. Lebedinskim.

A 10621-66

ACC NR: AP5027303

SOURCE CODE: UR/0241/65/010/010/0050/0054

AUTHOR: Tikhaya, M. G.; Novikovs, A. P.; Parfenov, Yu. D.

28  
B

ORG: none

TITLE: Distribution of uranium in the dog organism at periods long after the inhalation of uranium oxide

SOURCE: Meditsinskaya radiologiya, v. 10, no. 10, 1965, 50-54

TOPIC TAGS: experiment animal, isotope, ion-distribution, uranium compound, ~~chemical labelling~~ radiation biologic effect

ABSTRACT: The metabolism of inhaled poorly soluble uranium compounds was studied with labeled  $U_3O_8$  aerosol ( $U^{235}$  and  $U^{238}$ ). The animals inhaled an aerosol containing  $310 \cdot 10^{-4}$  -  $634 \cdot 10^{-4}$  mg/l for 60 minutes daily for 5-7 days, a total of 300-420 minutes, and were then observed for up to 5 years. The animals' organs were examined shortly after 23, 31 $\frac{1}{2}$  or 60 months by luminescence and radiometry to determine uranium contents. No difference was seen for the 2 isotopes. In the one dog sacrificed 20 minutes after 60 minutes inhalation of  $135 \cdot 10^{-4} U_3O_8$  mg/l, the highest content was found in the gastrointestinal tract. The lung retained about 29% of the inhaled material but the content in

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UDC: 615.771.991-032:611.2-033

L 10621-66

ACC NR AP5027303

the blood was insignificant. After 23 months,  $U^{235}$  content in the organs declined in the following order: lungs, bones, kidneys and liver. The dog examined after 31½ months had died a natural death. There the kidneys contained more uranium than the lungs. Semi-elimination from the lungs between the 23rd and 60th month was estimated at 10.1% with a biological half life of 280 days. After 60 months, accumulation was greatest in the mediastinal and bronchial lymph nodes and exceeded that in the lungs 550-870 fold. One of the sacrificed dogs was pregnant; 6 embryos were found in which  $U^{235}$  was detected. It was calculated that 0.01-0.06% of the  $U^{235}$  had passed from the mother's organism through the placenta. Orig. art. has: 4 tables.

SUB CODE: 06 // SUBM DATE: 14Dec64/ ORIG REF: 004/ OTH REF: 007

HW  
cont 2/2

PARFENOV, Yu.I.

Independence of the Nemkina intrusive complex. Mat. po geol. i pol.  
iskop. Kras. kraia no. 3: 243-245 '62. (MIRA 17:2)

26

PROCESSES AND PROPERTIES INDEX

Preparing stable naphthenate driers. A. Dinkler and A. Parfenova. *Makolebo Zhirovos Delo* 15, No. 3, 29-32 (1959).—Naphthenate driers, prepd. in the form of acid salts from naphthenic acids refined by distn. with superheated steam, are preferable to the neutral salts because of better soly. and stability. They are readily oil-sol., leaving no insol. residue if gently warmed. As a drier Co naphthenate is superior to the linolate; it is also paler in color and has lower viscosity. For prepn. of the driers the 2-stage method is recommended for Mn, Co and Ca naphthenates, and the fusion method (120-125°) for Pb naphthenate. Linseed-oil paint films show about the same () absorption and hardness with naphthenate as with linolate driers. Tabulated data and curves show the ash content and metal content of acid and neutral naphthenates of Mn, Co and Pb; max., optimum and min. drier concn. in paints (same naphthenates); and the rate of drying of paint films, in comparison with Co linolate as drier.

Julian F. Smith

ASB 3LA METALLURGICAL LITERATURE CLASSIFICATION

1950M 1710815VH 1950M 1449 04V 031 03115701C 1950M 10410V 191



*Parfenova, A.I.*

PARFENOVA, A.I.; SITNIKOVA, L.V.; TSYGANKOVA, A.D.; KABAKISHISHEVA, T.I.

Combined method for obtaining aureomycin and vitamin B<sub>12</sub>. Med.  
prom. 11 no.8:10-12 Ag '57. (MIRA 10:11)

1. Moskovskiy zavod meditsinskikh preparatov No.1.  
(AUREOMYCIN) (VITAMINS - B)

Parfenova, A.I.

The theory of sulfite pulping and its practical importance.  
 I. The sulfonation of lignin with aqueous sulfur dioxide solutions. M. G. Elashberg, A. I. Parfenova, and B. J. Tikhonovskaya. *Bumash. Prom.* 30, No. 6, 6-13 (1955). The relative sulfonating effect of free and combined SO<sub>2</sub> was studied. Extd. spruce-wood flour (I) was heated to 80° over 2 hrs. in aq. solns. contg. (A) 10% SO<sub>2</sub>; (B) 10% SO<sub>2</sub> and 0.7% MgO; (C) 10% SO<sub>2</sub> and 3.12% MgO. After 5, 10, and 15 hrs. at 80° the percentage tightly bonded S (II) in the lignin in I heated in A was 2.4, 3.8, and 4.0; in B 1.3, 2.6, and 3.4; and in C 0.9, 1.5, and 1.8. I (1 part) was heated 3 hrs. at 100° in 2% HCl, washed, dried at 80°, and heated in 10 parts of solns. contg. (D) 15% SO<sub>2</sub>; (E) 15% SO<sub>2</sub> and 1.2% Na<sub>2</sub>O; (F) 15% SO<sub>2</sub> and 7.2% Na<sub>2</sub>O. The II in prehydrolyzed I heated in D after 100, 200, 300, 400, and 500 hrs. was 1.6, 2.5, 3.2, 3.8, and 4.0; in E 1.2, 2.0, 2.0, 3.3, and 3.9; in F 0.5, 0.7, 1.0, 1.2, and 1.6; II in unhydrolyzed I after 25, 50, 75, and 100 hrs. at 50° in 15% SO<sub>2</sub> soln. was 2.0, 3.0, 3.7, and 4.4. These data show that the principal sulfonating agent is free SO<sub>2</sub> in the undissoc. state. I was heated at 50 and 100° in solns. contg. 6% free SO<sub>2</sub> and (G) 0.0; (H) 3.0, and (J) 5.0% combined SO<sub>2</sub> (NaHSO<sub>3</sub>). After 50, 100, 150, and 200 hrs. the II in I heated at 50° in G was 1.7, 2.5, 3.1, and 3.5; in H 1.5, 2.3, 2.9, and 3.4; and in J 1.3, 2.1, 2.8, and 3.3. The II in I heated 100 hrs. at 50° in solns. contg. 6% free and 1, 3, and 5% SO<sub>2</sub> (NaHSO<sub>3</sub>) was 3.8, 3.8, and 3.8; comparable values after 120 hrs. at 50° were 2.8, 2.65, and 2.5; showing that in the initial stages of cooking increased combined SO<sub>2</sub> retards sulfonation. I was heated at 100° in solns. contg. 5.5% free

5/9  
 0  
 0  
 0  
 1/6

Eliasberg, M.G.

SO<sub>2</sub> and (K) 1.0, (L) 2.0, and (M) 5.0% combined SO<sub>2</sub> (NaHSO<sub>3</sub>) and (N) 3.12% combined SO<sub>2</sub> (MgO). The II in I after 2, 4, 6, 8, and 10 hrs. heated in N was 1.5, 3.3, 4.3, 5.2, and 5.7; in M 1.4, 3.1, 4.2, 4.9, and 5.5; in L 1.3, 2.9, 3.8, 4.0, and 6.25; and in K 1.25, 2.6, 3.4, 4.1, and 4.6. In a cooking acid contg. 5.6% free and 1.5-2% combined SO<sub>2</sub>, the free SO<sub>2</sub> contributed 85-90% of the S combined in the lignin. I was heated 4 hrs. to and 1 hr. at 145° in solns. contg. 0.0, 1, 3, 5, 7, 9, 13, and 17% combined SO<sub>2</sub> (NaHSO<sub>3</sub>); the percentage of lignin dissolved was 20, 27, 37, 45, 51, 54, 59, and 64%, and the percentage polysaccharides dissolved was 62, 62.5, 63, 64, 66, 67, 68, and 71%. The percentage S in lignin from I heated 12 hrs. at 80° in solns. contg. 5, 10, 15, and 20% SO<sub>2</sub> was 3.2, 4.1, and 5.0, resp. II in I heated 16 hrs. at 60° in solns. contg. 5, 10, 15, and 20% SO<sub>2</sub> was 2.3, 2.7, 3.1, and 3.4%, and at 80° was 3.4, 4.6, 5.4, and 6.3%. The percentage S in lignin from I heated at 80° in N HCl contg. 10, 15, and 20% SO<sub>2</sub> after 1, 3, 5, 7, 9, 13, and 17 hrs. was 0.6, 1.0, 2.3, 2.8, 3.2, 3.8, and 4.5 for 10% SO<sub>2</sub>; 0.8, 1.0, 2.7, 3.4, 3.7, 4.5, and 5.1 for 15% SO<sub>2</sub>; and 1.3, 2.5, 3.2, 3.8, 4.4, 5.4, and 6.3 for 20% SO<sub>2</sub>. Corresponding curves for I heated in SO<sub>2</sub> solns. contg. no HCl; essentially coincided; that is, the HCl had no effect on the lignin sulfonation. II. The production of high-quality sulfite pulp by cooking wood with aqueous sulfur dioxide solutions. *Ibid.* No. 10, 5-7. I was heated 3 hrs. in a soln. (pH 1) contg. 47.55 cc. 0.2N HCl and 25 cc. 0.2N KCl in 27.45 cc. H<sub>2</sub>O, washed, dried at 50°, and cooked in acid contg. 6.25%

*Elishberg, M. G. . . .*

total SO<sub>2</sub> and 0.7% MgO 1.6 hrs. to and 2.0 hrs. at 165°, 3.5 hrs. to and 0.5 hrs. at 145°; I prehydrolyzed at 120, 100, and 80° contained 39.7, 20.0, and 11.7% lignin; the pulp from unhydrolyzed I contained 0.68% lignin. From these data the "safe" impregnation temp. at pH 1 for 3 hrs. was 70°. II in (passing a 100-mesh screen) after immersion at 50° in a 15% soln. of SO<sub>2</sub> for 10, 20, 40, 60, 80, and 120 hrs. was 1.7, 2.4, 3.3, 4.0, 4.8, and 5.1; the percentage pulp yield was 90, 84, 74, 68, 63, and 56; the percentage lignin in the pulp was 23, 27, 24, 19, 16, and 8%. Comparable values for 5 × 5 × 0.5-in. spruce chips (III) were: percentage S in lignin 1.3, 1.8, 2.7, 3.2, 3.7, and 4.6; percentage pulp yield 96, 94, 89, 88, 87, and 85; and percentage lignin in pulp 29.5, 29, 28, 27, 26.5, and 24, resp. III were impregnated with a 15% aq. soln. of SO<sub>2</sub> at 50° for various times and then pulped at 115° in a 0.5% SO<sub>2</sub> soln.; for cooking times of 1, 2, 3, and 4 hrs. II was 1.55, 2.05, 2.55, and 3.1 for 3 hrs. impregnation time; 2.05, 2.65, 3.2, and 3.8 for 0 hrs.; 2.4, 3.05, 3.7, and 4.15 for 0 hrs.; and 3.0, 4.0, 5.0, and 6.0 for 12 hrs. III were impregnated at 50° and pulped (1 hr. to and 4 hrs. at 115°); the percentage lignin in the pulp for impregnation times of 0, 10, 30, 60, 70, and 110 hrs. was 18, 17, 0.5, 4.5, 3.5, and 2.0%; for a cooking schedule of 1 hr. to and 1 hr. at 140° the percentage lignin in the pulp for impregnation times of 5, 10, 15, 20, 30, 40, and 50 hrs. was 25, 10, 7, 4.7, 2.8, 1.9, and 1.7%. Normal spruce chips (20 × 25 × 3 mm.) were impregnated at 50° with 15% SO<sub>2</sub> soln. 72 hrs. followed by cooking with 15% SO<sub>2</sub> soln. at 145° for cooking times of 10, 20, 30, and 40 min. pulp yields were 30, 40, 44, and

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42%, and the Borkman nos. of the pulps 69, 28, 23, and 18. The 80% yield pulp had a high brightness, low screenings, a breaking length of 10,000 m., a double fold of 4200, and 4.5% stretch. III. The role of bisulfite in sulfite cooking. M. G. Eliashberg. *Ibid.* 31, No. 1, 8-10(1958). --I was heated 3 hrs. in standard buffer solns. with pH from 1 to 9 at various temps., washed, dried, and subjected to a sulfite cook (1.5 hrs. to and 2.0 hrs. at 105°, 3.5 hrs. to and 0.5 hrs. at 145°). The yield of residual wood heated at pH 1, 2, 3, 4, 5, 6, and 9 and 80° was 81, 90, 92, 93, 94, 93, and 91; at 100° was 77, 86, 91, 92.5, 93, 92.5; and 90; at 120° 68, 79, 87, 91, 92.5, 92, and 88; and at 140° 62.5, 72, 82, 83, 91.5, 91, and 87. After pulping, the percentage yield of pulp from I heated at the above pH values at 80° was 57, 63, 60, 49, 49.5, 50.5, and 54; at 100° 73, 59, 51.5, 50.5, 50.6, 52.5, and 57; at 120° 19, 61, 54, 52.5, 53, 64, and 60; and at 140° 95, 74, 60, 50, 57, 58, and 64; the corresponding lignin contents of the pulps were, at 80°, 13, 9, 7.5, 7, 6.5, 6.0, and 7.5; at 100° 20, 13, 9, 7.5, 7, 7, and 9; at 120° 27, 17, 12, 8, 7.5, 8, and 12; and at 140° 30, 23, 18, 13, 12, 13, and 21%. Pulp from unhydrolyzed I contained 6% lignin. As the temp. of prehydrolysis increased, the "safe" pH range varied, being pH 3.5-8.0 at 80° and 4-9.5 at 100°. Since the pH during the initial stages of sulfite cooking was approx. 2.5 (at 8.0% total SO<sub>2</sub> and 0.85% CaO), impregnation temp. should not exceed 100-105°. IV. The relation between lignin reactivity and the formation of sulfuric acid in sulfite cooking. M. G. Eliashberg, M. N. Tsipkina, and I. A. Kurist.

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Yuk. *Ibid.* No. 3, 18-10. — III were cooked in sulfite cooking acid contg. various amts. of side relief, all solns. brought to 0% total  $\text{SO}_2$  and 0.0%  $\text{CaO}$ ; the acid to wood ratio was 6:1, and the cookings schedule 2 hrs. to and 3 hrs. at  $110^\circ$ , 0.5 hr. from  $100$  to  $125^\circ$  and 1 hr. at  $125^\circ$ , 0.5 hr. from  $125$  to  $145^\circ$  and 0.5 hr. at  $145^\circ$ . In the absence of chips the  $\text{SO}_2$  in g./l. in the waste liquor was 0, 0.7, 1.5, 3, 7.7, and 14, and in the presence of chips 0, 0.25, 0.75, 1.5, 2.5, and 3.8 for 0, 20, 40, 60, 80, and 100% side relief. I was heated in dist.  $\text{H}_2\text{O}$ , then cooked 0 hrs. at  $100^\circ$  with cooking acid contg. 13% total  $\text{SO}_2$  and 0.8%  $\text{Na}_2\text{O}$  at a liquor to wood ratio of 1:10; for hydrolysis times of 0, 1, 3, and 6 hrs. the yield of bone-dry pulp was 54.3, 60.2, 67.5, and 69.9%, the lignin content of the pulp 8.7, 17.6, 20.5, and 30.1%, II 6.5, 4.5, 3.8, and 3.1%, and the content of  $\text{SO}_2$  (as  $\text{SO}_2$ ) in the waste liquor in g./l. 0.49, 0.71, 0.80, and 0.85. I variously treated was heated 0 hrs. at  $100^\circ$  in cooking acid contg. 0.5% total  $\text{SO}_2$  and 0.6%  $\text{Na}_2\text{O}$  and then heated 4 hrs. at  $115^\circ$  in 6.5%  $\text{SO}_2$  soln. For (a) untreated I and (b) I heated 2 hrs. at  $140^\circ$  in  $\text{H}_2\text{O}$ , (c) 2 hrs. at  $150^\circ$  in  $\text{H}_2\text{O}$ , and 6 hrs. at  $100^\circ$  in 3%  $\text{HCl}$ , the percentage wood dissolved during prehydrolysis was —, 17.7, 23.0, and 32.2, and the percentage carbohydrate dissolved was —, 12.9, 21.2, and 27.3. For

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Eliashberg, M.G. ---

various amts. of wood dissolved during prehydrolysis (0, 10, 20, and 30%) II after sulfite pulping was 4.4, 4.0, 3.5, and 2.4%; and the  $SO_3^{--}$  content of the spent liquor in g/l was 1.3, 1.5, 1.3, and 1.2.5. In a study of the effect of the S content of the lignin on sulfonation, a, b, and c were washed 5 times at 100° with  $H_2O$ , dried at 50°, and sulfonated several times by heating 6 hrs. at 100° in cooking acid contg. 0.5% total  $SO_3^{--}$  and 1.0%  $Na_2O$ . II from a was 3.8 and 4.8% after 1 and 2 sulfonations; from b was 3.2, 4.4, and 5.3 after 1, 2, and 3 sulfonations; from c 2.8, 4.2, 4.7, and 5.1 after 1, 2, 3, and 4 sulfonations; corresponding values for the  $SO_3^{--}$  in the spent liquor was 0.2 and 0.4 for a; 0.3, 0.6, and 0.9 for b; and 1.0, 0.7, 1.3, and 2.1 for c. Sulfonation velocities decrease in the following order of reaction vessels: bronze(B)-stainless steel(SS)-glass. Values for percentage total  $SO_3^{--}$  and combined as  $CaO$ , max. cooking temp., total cooking time (hrs.), percentage air-blown yield, percentage screenings, and Björkman no. were: SS: 0.2 and 1.0, 125°, 12.75, 60, 3.3, and 103 and B: 0.3 and 1.0, 125°, 10, 49.4, 0.5, and 34; SS: 8.0 and 1.0, 125°, 11.25, 46.0, 2.0, and 78 and B: 8.5 and 1.0, 125°, 10.25, 42.0, 0.3, and 19; SS: 3.6 and 0.9, 145°, 0.5, 46.3, 0.5, and 87 and B: 3.2 and 0.9, 145°, 0.25, 46.7, 3.3, and 60; SS: 6.1 and 0.8, 130, 0.75, 49.9, 0.1, and 71 and B: 0.3 and 0.8, 130, 10.25, 47.8, ---, and 35; and SS: 0.4 and 0.8, 130°, 0.25, 46.3, ---, and 33 and B: 0.3 and 0.8, 130, 6, 45.0, 0.2, and 31. Ultraviolet irradiation also accelerated lignin sulfonation. I in glass and quartz bombs was heated 5 hrs. at 100° with acid contg. 5% total  $SO_3^{--}$  and 1%  $CaO$ ; II was 4.2 in the quartz and 3.7 in the glass bombs. 6/6

John Lake Kenya

ELIASHBERG, M.G.; PARFENOVA, A.I.; TIKHOMIROVA, Ye.V.

New data on the theory of sulfite wood pulp cooking and their  
practical significance. Bum.prom. 30 no.10 no.10:5-7 0 '55.  
(MLRA 9:1)

1.TSentral'nyy nauchno-issledovatel'skiy institut bumagi.  
(Wood pulp)



ACC NR: AP6035879 (A,N) SOURCE CODE: UR/0413/66/000/020/0104/010422

INVENTOR: Gol'dat, S. Yu.; Sokolova, R. V.; Firsova, A. F.; Kadakova, L. P.; Parfenova, A. I.; Karakishisheva, T. I.; Stepanova, N. V.

ORG: none

TITLE: *Actinomyces aureofaciens* strain LSB-181, producing chlortetracycline and tetracycline. Class 30, No. 187242. [Announced by All-Union Scientific Research Institute for Antibiotics (Vsesoyuznyy nauchno-issledovatel'skiy institut antibiotikov)]

SOURCE: Izobreteniya, promyshlennyye obraztsey, tovarnyye znaki, no. 20, 1966, 104

TOPIC TAGS: antibiotic, drug, *Actinomyces aureofaciens*, chlortetracycline, tetracyclineABSTRACT: An Author Certificate has been issued for strain LSB-181 of *Actinomyces aureofaciens*. Light-sensitive mycelia in 5—6 mm colonies appear on its tenth day of growth on no. 12 organic agar medium at 28C. On no. 11 synthetic medium, dirty-white colonies 2.5—3 mm in diameter appear, and on pea medium, brown, raised, wrinkled, as porulating colonies seven mm in diameter are found. Milk is completely peptonized on the tenth day, and coagulation is noted on the 15th day, at which

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UDC: 615.45:615.779.931

ACC NR: AP6035879

time the gelatin is also slightly liquified. The sporophores lack coils, and spores are rectangular and oval. Activity in laboratory conditions on regulation media with corn extract is of the order of 5000—5600 j/ml. Also, this strain is resistant to actinophages 22 and 22a. [WA-50]

SUB CODE: 06/ SUBM DATE: 28May65

Card 2/2

YEGOROV, N.M.; LEVINA, A.A.; VASILENOK, Yu.I.; KONOPLEV, B.A.; PARPENOVA,  
A.M.; KASHIRINA, N.B.

Effect of impurities in the solvent on the synthesis of low pres-  
sure polyethylene. Plast. massy. no.9:1-4 '65. (MIRA 12:7)

VASIL'YEV, V.P.; VASIL'YEVA, V.N.; KLINDUKHOVA, N.A.; PARFENOVA, A.N.

Equilibria in aqueous solutions of calcium, strontium, and barium  
nitrates. *Izv.vys.ucheb.zav.;khim. i khim.tekh.* 6 no.2:339-341  
'63. (MIRA 16:9)

1. Ivanovskiy khimiko-tehnologicheskii institut, kafedra  
analiticheskoy i fizicheskoy khimii.  
(Alkaline earth nitrates) (Complex compounds)

PARFENOVA, A.V.; USKOV, V.S.

Refining and analysis of benzoic acid. Nov. nauch.-issl.  
rab. po metr. VNIIM no.1:17-21 '63. (MIRA 17:9)

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N. 8060

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S/081/62/000/006/098/117  
B162/B101

**AUTHORS:**

Parfenova, D. S., Sokolova, Z. F., Finkel', E. E., Chmutov, K. V.

**TITLE:**

Study of the effect of ionizing radiation on the moisture penetrability of polyethylene

**PERIODICAL:**

Referativnyy zhurnal. Khimiya, no. 6, 1962, 614, abstract 6P31, (Tr. Tashkentsk. konferentsii po mirn. ispol'zovaniyu atomn. energii, v. II, 1959, Tashkent, UzSSR, 1961, 389-395)

**TEXT:** An investigation is made of the moisture penetrability of polyethylene irradiated with Co<sup>60</sup> gamma-rays in a dose range of 46 to 299 Mrad. It is established that the diffusion coefficient after irradiation in air drops slightly, while the coefficients of penetrability and solubility increase. The drop in the diffusion coefficient is associated with the increase in density of polyethylene through cross-linking as a result of irradiation. The rise in polarity, i.e., the development of carbonyl, carboxyl, and hydroxyl groups in the polymer, and its conversion from a hydrophobic material into a hydrophilic one. The increase in the coefficient of

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Study of the effect of ionizing ...

S/081/62/000/006/098/117  
B162/B101

moisture penetrability is connected with the rise in solubility. The substantial increase in polarity of polyethylene irradiated in air is confirmed by measurements of the dielectric properties. [Abstracter's note: Complete translation.]

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60

Parfenova, E.I.

USSR/Soil Science. Physical and Chemical Properties of Soils.

I-3

Abs Jour: Referat Zh-Biol., No 6, 25 March, 1957, 22447

Author : Parfenova, E.I.

Inst :

Title : The Investigation of Podzol Soil Minerals in Connection With their Genesis.

Orig Pub: V sb.: Kora vivetrivaniya. No 2, M., AN SSSR, 1956, 31-44

Abstract: A study was conducted of the soddy strongly podzol soil of Ostarkina, Moscow oblast', situated in the upper plain portion of a plateau under a secondary birch park-forest on a dense grass cover. To prepare the samples for minerological analysis, they were divided into fractions by Sabanin's method, the parts measuring  $> 2$ ; 2-1; 1-0.5; 0.5-0.25; 0.25-0.10; 0.10-0.01; and  $< 0.01$  mm. The examination of minerals in fractions larger than 0.25 mm was conducted under a binocular magnifier, particles smaller than 0.25 were first analyzed gravitationally on a centrifuge with a Moshev gyrostat and Tul liquid. Mineral

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USSR/Soil Science. Physical and Chemical Properties of Soils.

I-3

Abs Jour: Referat Zh-Biol., No 6, 25 March, 1957, 22447

determination was conducted by the immersion method. Also a microscopic examination was conducted of plane-parallel micro-sections prepared from soil without disturbing its structure. The author concluded that in formation of the podzol horizon of clayey podzol soils, the essential role belongs to secondary quartz. In the alluvial horizon of podzol soils, the specific soil minerals of clays which belong to ferrous beidellite (montmorillonite group) are synthesized. A biogenic origin is ascribed to the minerals in clays of the alluvial horizon. The analytical data are in 7 tables. The paper is illustrated.

Card : 2/2

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CA

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Investigation of primitive mountain-meadow soils on  
diorites of the Magish (Northern Caucasus) chain E. I.  
Pavlovskaya. *Trudy Pochvennogo Inst. im V. V. Dokuchaevskogo*  
34, 49-108 (1950).--The formation of these high-mountain  
(3000 m. above sea level) soils is traced from the original  
rocks. Mineralogical and chem. analyses of rocks and soils  
are given. M. Hosh

. CA

11D

The possible causes of the stunting of tea bushes. H. J. Parfenova and A. I. Troitskii. *Pochvovedenie* 1951, 322-8. Analyses of the soil and the plants (leaves, branches, and roots) of two tea plantations are correlated with the condition of the tea bushes in the respective areas, one showing a stunting condition. The data on the soil are: total, HCl soluble, and exchangeable cations. The data on the tea plants are ash analyses including  $\text{SiO}_2$ ,  $\text{Fe}_2\text{O}_3$ ,  $\text{Al}_2\text{O}_3$ ,  $\text{TiO}_2$ ,  $\text{P}_2\text{O}_5$ ,  $\text{MnO}$ ,  $\text{CaO}$ ,  $\text{MgO}$ ,  $\text{K}_2\text{O}$ ,  $\text{Na}_2\text{O}$ ,  $\text{Cl}$ ,  $\text{SO}_2$ ,  $\text{CO}_2$ , and molar  $\text{SiO}_2/\text{R}_2\text{O}_2$ . The leaves of the well developed tea bushes contained more Al and K. The leaves of the stunted bushes contained more Ca, Mg, and  $\text{SiO}_2$ , with a higher  $\text{SiO}_2/\text{R}_2\text{O}_2$  ratio. A high concn. of salts in the soil, 0.434 g./l., depressed growth; 0.891 g./l. was fatal; the best concn. was 0.192 g./l. Well developed bushes take in more Al and Mn than stunted tea bushes. This is assocd. with the higher quantity of available Al and Mn in the soil where the tea bushes thrived well. The ash of tea leaves on this soil contained 20-28% Al and 2-5% Mn, whereas on the soil with less available Al and Mn the ash of the tea leaves contained much less of these elements. A microscopic analysis of the ash of tea leaves shows that with the increase of Ca and  $\text{SiO}_2$  there is an active intake of Al and partially Fe. There is reason to assume that the Al and Fe accumulate in the tea leaves as oxalates and together with the Ca form a mineral similar to wevelite, differing somewhat in solv. in HCl. It is probable that the flavor of tea is assocd. with the quantity of these crystals in the ash of the leaves. J. S. J.

Secondary quartz in the podzolic horizon. E. I. Pavlov  
Izvestiya (Soil Inst., Acad. Sci. U.S.S.R.). *Doklady  
Akad. Nauk S.S.S.R.* 50, 1750-60(1947); *Chem. Zvesti*  
1948, I, 1284.—A crystal of true secondary quartz, which  
had been formed at a low temp., was found in a sample  
of podzolic soil from the Moscow region. The crystal  
was a sharply defined prism 0.113 mm. long and 0.026  
mm. thick;  $n_o = 1.553$ ,  $n_e = 1.545$ , double refraction  
0.008. Thus, the occurrence of secondary quartz in the  
podzolic horizon along with true phytoliths and amor-  
phous quartz has been demonstrated. M. G. Moore

IVANOVA, Ye.; PARFENOVA, G., inzhener-normirovshchik

Advanced work practices of the sifter V. Vorob'eva-Chinova.  
Muk.-elev. prom. 30 no.3:6-7 Mr '64. (MIRA 17:4)

1. Moskovskaya mashinoispytatel'naya stantsiya Vserossiyskogo ob'yedineniya khleboproduktov. 2. Starshiy inzhener-normirovshchik Moskovskoy mashinoispytatel'noy stantsii Vserossiyskogo ob'yedineniya khleboproduktov (for Ivanova).

KUTSENOK, B.Ye.; PARFENOVA, G.A.; VINOGRADOV, P.A.; PASKHALIS, T.K.

Polymerization of butadiene with acrylonitrile in the presence of redox system. Kauch. i rez. 22 no.2:1-4 F '63. (MIRA 16:2)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut sinteticheskogo kauchuka imeni Lebedeva.  
(Butadiene) (Acrylonitrile) (Polymerization)

S/138/63/000/002/001/007  
A051/A126

**AUTHORS:** Kutsenok, B.Ye., Parfenova, G.A., Vincgradov, P.A., Paskhalis, T.K.

**TITLE:** Butadiene polymerization with nitrile of acrylic acid in the presence of oxidation-reduction systems

**PERIODICAL:** Kauchuk i rezina, no. 2, 1963, 1 - 4

**TEXT:** Composition and conditions of polymerization are given for butadiene with nitrile of acrylic acid in an emulsion at 30°C and in the presence of Nekal, using oxidation-reduction systems. The polymerization of the benzene-petroleum-resistant CKH-18 (SKN-18), SKN-26 and SKN-40 rubbers is initiated by free radicals, formed in the decomposition of potassium persulfate, under the effect of an amine type activator. The following oxidation-reduction systems were tested as new, more active initiators of polymerization: a) isopropylbenzene hydrogen peroxide (hyperis), rongalite, and iron-trilon complex, for polymerization in an alkaline medium; b) hydrogen peroxide and rongalite, for polymerization in an acid medium. The initiating system for the polymerization had the following composition (in weight parts to 100 w.p. of monomer): for the alkaline medium -

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Butadiene polymerization with nitrile of ....

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A051/A126

rongalite 0.3, trilon B 0.06,  $\text{FeSO}_4 \cdot 7\text{H}_2\text{O}$  0.022, hyperis 0.2; for the acid medium - rongalite 0.2. The pH of the aqueous phase was 8 - 11 and 6 - 6.5, respectively. Experimental data showed that the application of a rongalite system, both in an alkaline, as well as acid medium, reduces the duration of polymerization of the butadiene with nitrile of acrylic acid, by at least 1.5 - 2 times, and ensures good reproducibility of the process. The latexes have a sufficiently high tensile strength. The suggested composition is accepted as optimum in an acid medium. A change in the pH from 8.5 to 11 in an alkaline medium does not affect the rate of polymerization. This also applies to a change in the trilon content from 0.01 to 0.06% of the monomer weight, provided the initiator is measured out during the process gradually. General experiments led to the recommendation of the following ingredients of the oxidation-reduction system in an alkaline medium: rongalite 0.1 - 0.15, trilon B 0.01,  $\text{FeSO}_4 \cdot 7\text{H}_2\text{O}$  0.005, hyperis 0.15 - 0.2, pH of the aqueous phase 9.0 - 10.5. The process duration (to a polymerization depth of 68 - 70%) for SKN-18 is 8 - 9 h, for SKN-26 7 - 8 h, for SKN-40 4.5 - 5.5 h. In an acid medium, the following composition of the oxidation-reduction system is recommended: rongalite 0.15 - 0.2, hyperis 0.15 - 0.2, pH of the aqueous phase 5.5 - 6.0. The process du-

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Butadiene polymerization with nitrile of ....

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A051/A126

ration in this case is: SKN-18 6 - 7 h, SKN-26 4.5 - 5.5 h, SKN-40 4 - 4.5 h. It is concluded that in the polymerization of butadiene with nitrile of acrylic acid at 30°C and in the presence of Nekal, the use of oxidation-reduction systems, consisting of isopropylbenzene hydrogen peroxide, rongalite and iron-trilon complex (in an alkaline medium) and isopropylbenzene hydrogen peroxide and rongalite (in an acid medium), increases the rate of the process by a factor of 1.5 as compared to rates achieved in the presence of a potassium persulfate-triethanolamine system. Rubbers produced with a rongalite system do not differ from serial-production rubbers. There are 2 figures.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut sinteticheskogo kauchuka im. S.V. Lebedeva (All-Union Scientific Research Institute of Synthetic Rubber imeni S.V. Lebedev)

Card 3/3

*Parfenov, G.H.*

*John* ✓ The inhibition mechanism of radical chain reactions.  
B. A. Dolgoplosk, D. S. Korotkha, G. A. Parfenova, B. L.  
Brusilmski, and B. B. Milovakova: Voprosy Khim.  
Kinetiki, Katalizi i Reaktivnoi Spособnosti, Akad. Nauk  
S.S.S.R. 1955, 1803-21. — A review of recent Russian and  
foreign research. W. M. Sternberg

*AM*

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*PARFENOVA, G.A.*

AUTHORS: Dolgoplosk, B. A., Parfenova, G. A.

79-11-37/56

TITLE: Reactions of Free Radicals in Solutions  
(Reaktsii svobodnykh radikalov v rastvorakh).  
XII. Investigation of the Mechanism of the Inhibiting Action  
of Polyphenols and Aromatic Amines Upon the Process of  
an Initiated Polymerization (XII. Issledeniye mekhanizma  
ingibiruyushchego deystviya polifenolov i aromaticheskikh  
aminov na protsess initsirovannoy polimerizatsii)

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ABSTRACT: Polyphenols and aromatic amines are widely used as inhibitors  
in initiated polymerizations and oxidations. In spite of many  
experiments it was hitherto not possible to determine their  
effect. Most of the researchers think that the inhibiting  
action of phenols and aromatic amines is based on their  
direct reaction with peroxides, hydroperoxides or with the  
initial active centers which are starting points of the  
chain-process. It was earlier shown by the authors that the  
inhibiting action of polyphenols and aromatic amines in the  
case of a thermal polymerization to the full only becomes  
effective in the presence of oxygen or metallic salts with  
variable valency, the polyphenols and aromatic amines being

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