"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0

PETROVA, G. N.

USSR/Metals Nov/Dec 48
Magnetite
Ferromagnetism

"Investigation of Powdery Magnetite," G. N. Petrova, 8 pp

"Iz Ak Nauk SSSR, Ser Geog i Geofiz" Vol XII, No 6

Studies effect of concentration of ferromagnetic components (Magnetite from Mt Vysokiy), and the size grains for ideal and normal magnetization on the magnetic properties of a powder, in particular, on the internal demagnetizing factor. Limits for adaptability of the formula are picked for calculation of susceptibility of ferromagnetic and nonferromagnetic powder mixture.

25/49X73

PA 25/49X73

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0

PETROVA, G. N.

"The Internal Demagnetizing Factor," Iz. Ak. Nauk SSSR, Ser. geograf. i geofiz., 13, No.4, 1949.

Translation 563465

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0

PETROVA, G. N.

"The External Demagnetization Factor," Iz. Ak. Nauk, Ser. Geog. i Geofiz., Vol. 13, No. 4, 1949

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0

PETROVA, G. N.; [redacted]. YUKHNOVETS, N. I.

Magnetism, Terrestrial

Variation of magnetic properties of strata in a fault zone, Izv. AN SSSR Ser. Geofiz, No. 2, 1956, PP [redacted] 115-123

Explanation of the causes of the formation of negative magnetic anomalies which are adapted to the fracture zone. Measurement of magnetic susceptibility showed that rocks of the fracture zone are less susceptible than unbroken rocks of the same petrographic composition. Investigation by models gives reason to assume that even partial disruption of the vector of residual magnetization may be significant.

254T75

Monthly List of Russian Accessions, Library of Congress, June 1957, Unclas.

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0

PETROVA, G. N.

FD 354

USSR/Geophysics - Book review

Card 1/1

Author : Petrova, G. N., Candidate of physicomathematical sciences

Title : Book review: B. M. Yanovskiy, Zemnoy magnetizm (Terrestrial Magnetism), 2d edition, supplemented, State Publishing House of Technical-Theoretical Literature, Moscow, 1953, 591 p, 6000 copies, price 12.40 r.

Periodical : Izv. AN SSSR, Ser.geofiz. 2, 195-198, Mar/Apr 1954

Abstract : Recommends the reviewed book as a valuable manual for pedagogic and practical work. Claims the book to be a great successful effort of the author The first edition came out in 1941.

Institution : -

Submitted : -

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0

PETROVA, G.N.

Location of a buried fault by the magnetometric method. Trudy Geofiz.inst.no.30:278-285 '55. (MIRA 9:6)
(Magnetometer) (Faults (Geology))

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0

GILBERT, William; DOVATUR A.I.[translator]; KALASHNIKOV, A.G., redaktor; PETROVSKIY, I.G., akademik, redaktor; BYKOV, K.M., akademik, redaktor; KAZANSKIY, B.A., akademik, redaktor; SHMIDT, O.Yu., akademik, redaktor; ANDREYEV, N.N., akademik, redaktor; SHCHERBAKOV, D.I., akademik, redaktor; YUDIN, P.F., akademik, redaktor; DELONE, B.N., redaktor; KOSHTOYANTS, Kh.S., redaktor; SAMARIN, A.M., redaktor; LEBEDEV, D.M., professor, redaktor; FIGUROVSKIY, N.A., professor, redaktor; KUZNETSOV, I.V., kandidat filosofskikh nauk, redaktor; PETROVA, G.N., redaktor; AL'ZAN, N.P., tekhnicheskiy redaktor.

[The magnet, magnetic bodies, and the great magnet the earth; a new physiology, demonstrated by many arguments and experiments. Translated from the Latin by A.I.Dovatur] O magnite, magnitnykh telakh i o bol'shom magnite-zemle; novaia fiziologiia, dokazannaia mnozhestvom argumentov i opytov. Perevod s latinskogo A.I.Dovatura. Red., stat'ia i kommentarii A.G.Kalashnikova. Moskva, Izd-vo Akademii nauk SSSR, 1956. 411 p. (MLRA 9:6)

1.Chlen-korrespondent AN SSSR (for Delone, Koshtoyants, Samarin).
(Magnetism)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0

15-57-10-14588

Translation from: Referativnyy zhurnal, Geologiya, 1957, Nr 10, pp 202-203 (USSR)

AUTHORS: Kolyubakin, V. V., Ozerskaya, M. L., Petrova, G. N.

TITLE: A Field Apparatus for Determining the Magnetic Properties of Rocks (Polevoy pribor dlya opredeleniya magnitnykh svoystv gornykh porod)

PERIODICAL: Sb. posvyashch. pamyati akad. P. P. Lazareva, Moscow, AN SSSR, 1956, pp 351-362

ABSTRACT: The authors discuss the theory and results of a susceptibility-meter attachment to an ordinary field magnetometer (Schmidt balance). This device permits measurement of susceptibility and residual magnetism of samples of magnetic sedimentary rocks as well as of magmatic rocks under field conditions with a satisfactory degree of precision. The meter consists of two susceptibility solenoids connected in series, through which an electric current is passed, and which

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15-57-10-14588

A Field Apparatus for Determining the Magnetic (Cont.)

is placed over the magnetic system of the magnetometer. When identical solenoids are placed symmetrically in relation to the magnetic system of the balance, the reading of the magnetometer does not change. When a sample is introduced into one of the solenoids, it acquires an induced magnetic moment proportional to its susceptibility, and the reading of the magnetometer changes, permitting determination of the susceptibility. The sample to be measured is ground and placed in a test tube. By using uncrushed samples cut into cubes, it is also possible to measure the residual magnetism. The authors give detailed accounts of the apparatus, including the results of calibration. For measuring susceptibility, the instrument is calibrated by using a cylindrical coil; but for residual magnetism a rectangular coil is used. Comparative measurements were supplemented by several other measurements both in the susceptibility meter and on a lambda-static magnetometer as well as on an instrument of A. G. Kalashnikov. The results reveal a systematic small deviation, apparently associated with insufficient precision in determining the meter constants. However, this

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0

PETROVA, G.N.

USSR/Physics of the Earth - Electric and Magnetic Field of the Earth, O-4

Abst Journal: Referat Zhur - Fizika, No 12, 1956, 36398

Author: Grabovskiy, M. A., Petrova, G. N., Isakova, L. I.

Institution: None

Title: On the Occurrence of Thermal Residual Magnetization of Mountain Rocks

Original Periodical: Izv. AN SSSR, ser. geofiz., 1956, No 1, 56-60

Abstract: A description of an experimental investigation of thermal magnetization of ferromagnetic mountain rocks and the conditions for the occurrence of residual magnetization I_r at all the stages of the cooling of the rock. Magnetometric methods are used to measure the magnetic properties of specimens of magnetite in the Ural, Kursk, and Angaro-Ilimsk deposits, and of pyrrotine and nickel. For all the specimens, curves of the thermal magnetization I_{it} are given, which show how the magnetization I_{it} increases in a definite orienting field (on the order of the magnitude of the

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0

USSR/Physics of the Earth - Electric and Magnetic Field of the Earth, 0-4

Abst Journal: Referat Zhur - Fizika, No 12, 1956, 36398

Abstract: earth's field and above) when t of the specimen drops from the Curie point (t_c) to the room temperature ($t = 20^o$). Investigation was made of the residual part of the thermal magnetization I_{rt}. It is shown, that I_{rt} occurs at values of t close to t_c. The development of the thermal-residual magnetization in weak fields occurs fundamentally as a result of irreversible magnetization processes. Particular attention is paid to the determination of the stability of I_{rt} and of its coercive force (thermal coercive force H_{ct}). Plots are given for the dependence of the H_{ct} and H_c on the magnetizing magnetic field. H_{ct} is greater than H_c for the same specimen, and in the region of weak fields it is much higher than the magnitude of the field that causes a given thermal magnetization. In this manner, I_{rt} is magnetically stable. The high values of H_c and of H_{ct} for many mountain rocks helps them retain their magnetization for many geological periods and it is therefore of great significance to paleomagnetism. Bibliography, 10 titles.

Card 2/2

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0

USSR/Physics of the Earth - Electric and Magnetic Field of the Earth, 0-4

Abst Journal: Referat Zhur - Fizika, No 12, 1956, 36399

Author: Grabovskiy, M. A., Petrova, G. N.

Institution: None

Title: On the Stability of the Residual Magnetization of Mountain Rocks

Original Periodical: Izv. AN SSSR, ser. geofiz., 1956, No 3, 290-296

Abstract: Results are given of an experimental investigation on thermal-residual magnetization and on thermal coercive force of specimens of magnetite, pyrrotine, and nickel. The different course of the relative change in the magnetization and of coercive force for normal magnetization and for thermal magnetization is established. It is shown that the mountain rocks have a high magnetic stability to thermal magnetization, which gives a definite physical foundation for development of paleomagnetic investigations.

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0

PETROVA, G.N.

Three forms of magnetization of rocks. Izv.AN SSSR.Ser.geofiz. no.4: 431-436 Ap '56. (MLRA 9:8)

1. Akademiya nauk SSSR, Geofizicheskiy institut.
(Rocks--Magnetic properties)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0

Petrova, G. N.

Thermocoercive force of rocks at high temperatures. M. A. Grabovskii and G. N. Petrova. *Izvest. Akad. Nauk S.S.S.R., Ser. Geofiz.* 1950, No. 6, 519-24.—Report of expt. data on study of thermocoercive force of samples of magnetite of certain deposits during the process of their cooling. Data are illustrated graphically. G. S. M.

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0

PETROVA, G. N.

PHASE I BOOK EXPLOITATION 496

Akademiya nauk SSSR. Komitet po geodezii i geofizike

Mezhdunarodnaya assotsiatsiya geomagnetizma i aeronomii; tezisy dokladov na XI General'noy assembleye Mezhdunarodnogo geodezicheskogo i geofizicheskogo soyuza (The International Association of Geomagnetism and Aeronomy; Abstracts of the Reports at the XI General Assembly of the International Union of Geodesy and Geophysics) Moscow, Izd-vo AN SSSR, 1957. 46 p. 1,500 copies printed.

PURPOSE: This booklet is intended for dissemination of abstracts of papers presented by the Soviet members of the International Association of Geomagnetism and Aeronomy at the XI General Assembly of the International Union of Geodesy and Geophysics.

COVERAGE: This booklet with full English translation following the Russian text presents abstracts of papers, mainly on magnetics, telluric currents and auroras, presented by Soviet contributors at the XI General Assembly of the International Union of Geodesy and Geophysics. It was published by the National Committee for Geodesy and Geophysics of the Academy of Sciences of the USSR.

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0

PETROVA, G.N.

Magnetic stability of rocks. Izv.AN SSSR.Ser.geofiz.no.1:52-61 Ja '57. (MLRA 10:3)

1. Akademiya nauk SSSR. Institut fiziki zemli.
(Rocks--Magnetic properties)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0

PETROVA, G. N.

AUTHORS: Petrova, G. N. and Pospelova, G. A. 49-6-3/21

TITLE: On certain features of thermo-magnetisation. (O nekotorykh osobennostyakh termonamagnichivaniya).

PERIODICAL: "Izvestiya Akademii Nauk, Seriya Geofizicheskaya" (Bulletin of the Ac.Sc., Geophysics Series), 1957, No.6, pp. 728-736 (U.S.S.R.)

ABSTRACT: There is not only a quantitative but fundamentally also a qualitative difference between the effects of normal, ideal and thermo-magnetisation. The quantitative differences between the normal, ideal and thermo-magnetisation of magnetite from the Kursk magnetic anomaly in a field range of 0 to 250 Oe are plotted in Fig.1, p.728. Whilst the normal and ideal magnetisation show certain analogies, the thermo-magnetisation is fundamentally different and the values of the normal, ideal and thermo-magnetisation at various temperatures are plotted in Fig.2, p.729. The three types of magnetisation differ from each other only owing to the presence in the ferromagnetics of a crystallographic anisotropy and particularly of magnetostriction stresses. Increase of all the three types of magnetisation will be equal if there are either no stresses at all or

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On certain features of thermo-magnetisation. (Cont.)

if these are stabilised, i.e. if the number of domains capable of overcoming these stresses are orientated along the field and are constant for a given field. The difference in the percentual increase of the three types of magnetisation indicates the presence of stresses which increase with decreasing temperature. The difference in the percentual increase of the ideal and normal magnetisation depends on the ratio of the energy of the thermal motion and on the additional energy of the alternating magnetic field. Experimental results have shown that not only metallic ferromagnetics but also ferrites become magnetically anisotropic in the case of thermal magnetisation, although the specimens under consideration did not have a natural anisotropy; such an anisotropy was also detected in natural rocks in horizontal and vertical directions in the regions of the Kursk magnetic anomaly. The capability of producing a stable texture which is disrupted only after repeated heating to a temperature above the Curie point is one of the fundamental features of thermal magnetisation which differs from those of the other types of magnetisation. Thermo-magnetisation brings the material into a new and qualitatively different state, the material assumes new properties, namely,

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0

PETROVA, G. N., KALASHNIKOV, V. G., [A. G.,], LYBKIN, E. Y., SOLODOVNIKOV, G. M., BOLSHAKOVA, K. Y., and KOZISHOVA.

"Daily Variation of Short-Period Pulsations as a Function of Geographic and Geomagnetic Coordinates,"

paper submitted, 5th Gen. Assembly, CSAGI, Intl. Geophysical Year, Moscow 1-
August 1958

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0

PETROVA, G.N.

BOI'SHAKOV, A.S.; LAPINA, M.I.; PETROVA, G.N.; KALASHNIKOV, A.G.; METALLOVA, V.V., kand. fiz.-mat. nauk.

Magnetism of ores. Izv. AN SSSR. Ser. geofiz. no.1:141-143 Ja '58. (Ores--Magnetic properties) (MIRA 11:3)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0

S/049/59/000/03/005/019

AUTHORS: Petrova, G. N. and Ismail-Zade, T. A.

TITLE: Use of Stable Parameters in Detailed Correlation of [Geological] Sections

PERIODICAL: Izvestiya Akademii nauk SSSR, Seriya geofizicheskaya, 1959, Nr 3, pp 382-397 (USSR)

ABSTRACT: Stable parameters are magnetic properties of rocks such as the remanent coercive force H_c and the field, H_c', required to destroy the remanent magnetization. These properties do not depend on the concentration of the ferromagnetic component, but they are governed by the nature of this component and the magnetic pre-history of the rock. Consequently stable parameters should be suitable as "indicators" in studies of rock structure. The authors obtained about 400 samples from boreholes in Azerbaydzhan sedimentary rocks. The value of H_c' was measured by

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Use of Stable Parameters in Detailed Correlation of [Geological] Sections

demagnetization in a d.c. coil. The remanent magnetization I_n and the magnetic susceptibility $\varkappa$ were measured with a Dolginov magnetometer. Figs 1-3 show, respectively, variations of $\varkappa$, I_n and H_c' with the borehole depth. The results (Figs 1-17) show that of the three quantities: $\varkappa$, I_n and H_c', only H_c' indicated clearly the process of stratification of sedimentary rocks. Mineralogical analysis confirmed that, in contrast to I_n and $\varkappa$, the value of H_c' is independent of the concentration of the ferromagnetic component, but it depends on the nature of that component and on grain size. There are 17 figures and 4 Soviet references.

Card 2/3

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0

S/049/59/000/03/005/019

Use of Stable Parameters in Detailed Correlation of [Geological] Sections

ASSOCIATION: Akademiya nauk SSSR, Institut fiziki Zemli (Ac. Sci. USSR, Institute of Physics of the Earth)

SUBMITTED: October 3, 1958

Card 3/3

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0

PETROVA, G.N.; ZHILYAYEVA, V.A.

Laboratory criterion of magnetic stability of rocks. Izv.AN SSSR. Ser.geofiz. no.9:1328-1335 S '60. (MIRA 13:9)

1. Akademiya nauk SSSR, Institut fiziki Zemli.
(Rocks--Magnetic properties)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0

PETROVA, Galina Nikolayevna; KALASHNIKOV, A.G., doktor fiz.-matem. nauk, otv. red.;BUTOMO,N.N.,red.izd-va;ROMANOV,G.N.,tekhn.red.

[Laboratory estimation of the stability of residual magnetization] Laboratornaia otsenka stabil'nosti ostatochnoi namagnichennosti gornykh porod. Moskva, Izd-vo Akad.nauk SSSR, 1961. 102 p. (MIRA 15:1)

(Rocks--Magnetic properties)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0

KHRAMOV, A.N.; PETROVA, G.N.; KOMAROV, A.G.; KOCHEGURA, V.V.; Prinimali uchastiye: DIANOV-KLOKOV, V.I.; PIONTKOVSKIY, S.S.; YANOVSKIY, B.M., nauchnyy red.; RUSAKOVA, L.Ya., vedushchiy red.; GENNAD'YEVA, I.M., tekhn.red

[Methodology of paleomagnetic investigations] Metodika paleomagnitnykh issledovanii. Leningrad, Gos. nauchn.-tekhn.izd-vo neft. i gorno-toplivnoi lit-ry. Leningr. otd-nie, 1961. 130 p. (Leningrad. Vsesoiuznyi neftianoi nauchno-issledovatel'skii geologorazvedochnyi institut. Trudy, no.161) (MIRA 14:7)

1. Vsesoyuznyy neftyanoy nauchno-issledovatel'skiy geologorazvedochnyy institut (for Khramov). 2. Moskovskiy gosudarstvennyy universitet (for Petrova). 3. Vsesoyuznyy nauchno-issledovatel'skiy geologicheskiy institut (for Komarov, Kochegura). 4. Institut elementorganicheskikh soyedineniy (for Dianova-Klokova). 5. Institut fiziki Zemli AN SSSR (for Piontkovskiy). 6. Leningradskiy universitet (for Yanovskiy).

(Magnetism, Terrestrial)

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0

S/169/62/000/008/003/090
E202/E192

AUTHORS: Petrova, G.N., and Korobova, T.B.

TITLE: Magnetisation of rocks during small cyclic changes of temperature. (Thesis).

PERIODICAL: Referativnyy zhurnal, Geofizika, no.8, 1962, 9, abstract 8 A 43. (In the Symposium: 'Sostoyaniye i perspektivy razvitiya geofiz. metodov poiskov i razvedki polezn. iskopayemykh' ('The present state and perspectives of developing geophysical methods of locating and prospecting for useful minerals'), M., Gostoptekhizdat, 1961, 504-505).

TEXT: Rocks with increased values of residual magnetisation are encountered. If ferromagnetic material is repeatedly heated and cooled in the temperature interval 20 - 100 - 20 °C with constant external field, then the resulting magnetic parameters will be greater than in the normal magnetisation in the given field. This type of magnetisation is called "cyclic".

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0

PETROVA, G.N.; TRUKHIN, V.I.

Spontaneous change of the H_c particular magnetization cycles during the cooling of ferromagnetic substances. Izv.AN SSSR.Ser.geofiz. no.6:892-897 Je '61. (MIRA 14:5)

1. Akademiya nauk SSSR, Institut fiziki Zemli.
(Ferromagnetism)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0

PETROVA, G.N.

Various [illegible] oratory methods for determining the geomagnetic [illegible] of rock[illegible] Izv. AN SSSR. Ser. geofiz. no.11:1585-1598 N '61 (MIRA 14:11)

1. AN S[illegible], Institut fiziki Zemli.
(Rocks--Magnetic properties)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0

BURLATSKAYA, S.P.; PETROVA, G.N.

Archaeomagnetic method of studying changes in the geomagnetic field in the past. Geomag. i aer. 1 no.1 111-119 Ja-F '61. (MIRA 14:2)

1. Institut fiziki Zemli imeni O.Yu. Shmidta.
(Magnetism, Terrestrial)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0

BURLATSKAYA, S.P.; PETROVA, G.N.

First results of studying the geomagnetic field in the past by the archaeomagnetic method. Geomag.i aer. 1 no.2:262-266 Mr-Ap '61. (MIRA 14:7)

1. Institut fiziki Zemli imeni O.Yu.Shmidta AN SSSR.
(Magnetic measurements)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0

BURLATSKAYA, S.P.; PETROVA, G.N.

Restoring the picture of past changes in the earth's magnetic field by the archaeomagnetic method. Geomag. i aer. 1 no.3: 426-431 My-Je '61. (MIRA 14:9)

1. Institut fiziki Zemli imeni O.Yu. Shmidta.
(Magnetism, Terrestrial)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0

BURLATSKAYA, S.P.; PETROVA, G.N.

Change of the earth's magnetic field in the past according to archaeomagnetic, paleomagnetic, and observatory data. Geomag. i aer. 1 no.4:594-598 Jl-Ag '61. (MIRA 14:1)

1. Institut fiziki Zemli imeni O.Yu. Shmidta.
(Magnetism, Terrestrial—Secular variation)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0

PETROVA, G.N., red.; KARASEV, A.D., red.; IOVLEVA, N.A., tekhn. red.

[Paleomagnetism; collection of translated articles]Paleomagnetizm; sbornik statei. Moskva, Izd-vo inostr.lit-ry, 1962. 408 p. (MIRA 15:10)

(Magnetism, Terrestrial)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0

S/169/62/000/010/012/071
D228/D307

AUTHOR: Petrova, G.N. and Korobova, T.B.

TITLE: Magnetization of rocks at small cyclic temperature changes

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 10, 1962, 13, abstract 10A84 (Byul. nauchno-tekhn. inform. M-vo geol. i okhrany nedr SSSR, no. 2 (36), 1962, 50-53)

TEXT: A new form of magnetization (cyclic magnetization) is described. It arises in a rock if this is subjected to repeated heating for several score degrees in a constant magnetic field. In this case all magnetic parameters -- the remanent magnetization I_n, the coercive force H_c, the disruptive field H_c' -- increase simultaneously. The experimental set-up causing the formation of cyclic magnetization is described, as is its physical nature. When the temperature rises, the crystallographic anisotropy constant and the magnetostriction decrease, and the thermal motion energy also increases. The magnetostrictive energy changes. The change in the

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correlations of different energy forms results in the free energy minima being displaced, when conditions arise for the shift of the inter-domain boundaries. The repeated change of the stability of the boundaries induces their great displacement and causes the formation of cyclic magnetization. The test shows that this form of magnetization occupies an intermediate position between normal and ideal magnetization with respect to all magnetic parameters. It follows from the experimental data that cyclic magnetization exists in the field range in which there is no normal magnetization. Cyclic remanent magnetization is considerably more stable than normal remanent magnetization and can exist for an indefinitely long time in terrestrial-type fields. Since the absolute values of the parameters of cyclic magnetization are of the same order as the parameters of the natural remanent magnetization of the Kursk magnetic anomaly, the authors conclude that one of the causes of the magnetization of the Kursk magnetites may be the presence of cyclic magnetization in them.

[Abstracter's note: Complete translation]

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0

BEZUGLAYA, I.S.; MARTYNOVA, T.A.; PETROVA, G.N.; RYBAK, R.S.

Determining the origin of the magnetization of rocks by comparing the stability characteristics as exemplified by iron-bearing quartzites in the Kursk Magnetic Anomaly. Izv. AN SSSR. Ser. geofiz. no.4:514-523 Ap '62. (MIRA 15:4)

1. Institut fiziki Zemli AN SSSR.
(Kursk Magnetic Anomaly--Quartzite--Magnetic properties)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0

ACC NR: AP6027547 SOURCE CODE: UR/0384/66/000/003/0042/0050

AUTHOR: Burlatskaya, S. P. (Candidate of physico-mathematical sciences); Nechayeva, T. B.; Petrova, G. N. (Doctor of physico-mathematical sciences)

ORG: none

TITLE: What is archaeomagnetism?

SOURCE: Zemlya i vselennaya, no. 3, 1966, 42-50

TOPIC TAGS: earth magnetism, magnetization, earth magnetic field, earth core

ABSTRACT: The authors describe how ancient bricks and other fired clay objects are used to determine the past intensity of the earth's magnetic field, its direction and inclination for the purpose of establishing the structure of the earth's core. Objects made of fired clay have the unusual capacity to retain an "imprint" of the geomagnetic field which was in existence at the time of their firing. This effect is due to ferromagnetic minerals which are always contained in clay in some combination. These minerals are magnetized in the earth's magnetic field when they are heated in firing furnaces above the Curie point and then cooled to normal atmospheric temperature. The residual thermal magnetization formed in this manner is proportional to the intensity of the geomagnetic field and coincides with it in direction. This magnetization is very stable and therefore has been retained in ancient samples almost in its initial form. Orig. art. has: 11 figures.

SUB CODE: 08/ SUBM DATE: none

Card 1/1

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0

ACC NR: AP6021407 (N,A) SOURCE CODE: UR/0387/66/000/006/0088/0092

AUTHOR: Minibayev, R. A.; Mikhaylova, N. P.; Petrova, G. N.

ORG: Akademy of Sciences SSSR, Institute of Earth Physics (Akademiya nuak SSSR, Institut fiziki Zemli)

TITLE: Origin of magnetization of diallagous pyroxenites

SOURCE: AN SSSR. Izvestiya. Fizika zemli, no. 6, 1966, 88-92

TOPIC TAGS: magnetization, earth magnetism, geologic exploration, petrology, paleontology

ABSTRACT: This is a continuation of earlier studies of the magnetization of pyroxenites by one of the authors (Mikhaylova, Izv. AN SSSR, Ser. geofiz. no. 11, 1961). To check whether the magnetism of certain rocks is inherent and produced during the course of formation of the rock, or whether it was induced later by other means, such as chemical, the authors consider the singularities in the magnetization of pyroxenites, which are primary magmatic rocks. The pyroxenites tested were obtained from the October alkaline massif located in the southern Ukraine. The tests consisted of producing thermally-residual magnetization and ideal residual magnetization in a constant field along one edge of a cubic sample, with the earth's magnetic field cancelled out. The measurements were made at different temperatures. The tests show conclusively that the rocks became magnetized simultaneously with the occurrence of finely dispersed ferromagnetic grains in the pyroxene, and consequently the magnetiza-

Card 1/2 UDC: 550.382.3

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ACC NR: AP6021407

tion is as old as the rock. This result is of importance for paleomagnetic research, since it confirms the possibility of using rocks with crystalline intrusions for paleomagnetic research, and also permits estimates of the age of crystal rocks. Orig. art. has: 3 figures and 1 table.

SUB CODE: 08/ SUBM DATE: 08Dec64/ ORIG REF: 004/ OTH REF: 001

Card 2/2

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0

ACC NR: AP6029670 (N) SOURCE CODE: UR/0387/66/000/008/0096/0101

AUTHOR: Minibayev, R. A. ; Myasnikov, V. S. ; Petrova, G. N.

ORG: Institute of Geophysics, Academy of Sciences SSSR (Akademiya nauk SSSR, Institut fiziki zemli)

TITLE: A case of self reversal of remanent magnetization

SOURCE: AN SSSR. Izvestiya. Fizika Zemli, no. 8, 1966, 96-101

TOPIC TAGS: magnetite, magnetization, magnetometer, geology

ABSTRACT: The authors discuss the results of an investigation of the magnetic properties of titanomagnetite with distinct self-reversal characteristics obtained from the Kola peninsula. Studies with a large model of the Reichert miscroscope revealed a distinct microstructure of the titanomagnetite. An exceptionally pronounced lattice structure was revealed with an electron miscroscope. The magnetic properties of the titanomagnetite determined on 10 x 10 x 10 mm samples with an astatic magnetometer are tabulated. An analysis of these data indicated that titanomagnetite can acquire reverse thermo-remanent magnetization if it is decomposed into several phases by repeated heating above the Curie point with subsequent cooling. The stability parameters of such a multiphase species exhibit anomalous features; thermo-remanent magnetization can be less stable with respect to constant and variable fields than ideal magnetization, even in a sample in which self-reversal has not yet occurred.

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ACC NR: AP6029670

Orig. art. has: 1 table and 5 figures.

SUB CODE: 08/ SUBM DATE: 01Oct64/ ORIG REF: 001/ OTH REF: 007

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0

L 33381-66 EWT(k)/EWT(d)/EWT(m)/T/EWP(1)/EWP(v) IJP(c) DS
ACC NR: AP6021433 SOURCE CODE: UR/0413/66/000/011/0031/0032

INVENTOR: Ruvinskiy, L. G.; Gantman, S. A.; Petrova, G. N.; Pivnik, Ye. D.

ORG: none

TITLE: Machine for manufacturing electrodes for chemical power sources. Class 21, No. 182199

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 11, 1966, 31-32

TOPIC TAGS: electrode manufacturing equipment

ABSTRACT: This Author Certificate introduces an automatic machine for manufacturing electrodes for chemical power sources, e.g., positive electrodes for silicofluoro-

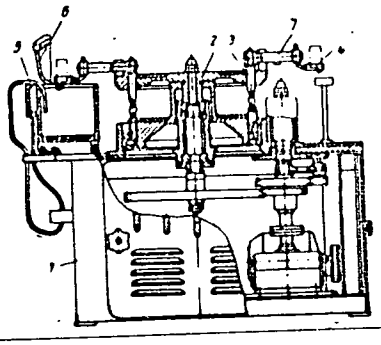

Fig. 1. Machine for manufacturing electrodes for chemical power sources

1 - Frame; 2 - drum with drive; 3 - sliding blocks; 4 - combs; 5 - tanks with solutions; 6 - suction; 7 - rods.

Card 1/2 UDC: 621.3.035.2.002.2

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L 33381-66

ACC NR: AP6021433

hydrogen power sources, consisting of a rotating drum, sliding blocks, electrode holders, tanks with solutions, circulation pumps and electric heaters (see Fig. 1). To improve both the automatic feature of the machine and the quality of electrodes produced, it is equipped with rods rigidly fixed in the sliding blocks and evenly distributed in a circle. Orig. art. has: 1 figure. [JR]

SUB CODE: 13/ SUBM DATE: 27Mar64/ ATD PRESS: 5026

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APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0

LETOKHOV, V.S.; VATSURA, V.V.; RUKHLIK, Yu.A.; FEDOTOV, [illegible], KOSOZHIKHIN, A.S.; ZHABOTINSKIY, M.Ye., DASHEVSKAYA, Ye.I.; KOZLOV, A.N.; RUVINSKIY, L.G.; VASIN, V.A., YUEGENEV, L.S., NOVIMEROVA, [illegible]; PETROVA, G.N., SHCHEDROVITSKIY, [illegible], BELYAYEVA, A.A., BRYKINA, L.I.; GLEBOV, V.M., DRONOV, M.I., KONOVALOV, M.D., TARABIN, V.N.; MIKHAYLOVSKIY, S.S., ZHEGALIN, V.G., ZHABIN, A.I., GRIBOV, V.S., MAL'KOV, A.I., CHERNOV, V.N., RATNOVSKIY, V.Ya., VOROBIYEVA, L.M.; MILOVANOVA, M.M., ZARIPOV, M.F., KULIKOVSKIY, [illegible], GONCHARSKIY, L.A.; TYAN KHAK [illegible]

Inventions. Avtom. [illegible] [illegible] [illegible]

[illegible]

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0

ANDREYEVA, [illegible]; B[illegible]KHA, [illegible]; [illegible], G.N.

Laboratory estimate of the magnetic stability of [illegible] Czech massif. Izv. AN [illegible]. Fiz. zem. no.[illegible]

1. Institut fiziki Zemli AN [illegible].

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0

L 60151-65 EWT(1)/FCC Po-4/Pi-4 GW

ACCESSION NR: AP5018287 UR/0387/65/000/006/0031/0042
550.384.32

33
31
B

AUTHOR: Burlatskaya, S. P.; Nechayeva, T. B.; Petrova, G. N.

TITLE: Evaluation of the westward drift of the secular path of the inclination and changes in the magnetic moment of the earth, from archeomagnetic data

SOURCE: AN SSSR. Izvestiya. Fizika zemli, no. 6, 1965, 31-42

TOPIC TAGS: geomagnetism, geomagnetic field, magnetic field measurement

ABSTRACT: New data are presented on the variation of inclination and intensity of the geomagnetic field, obtained with the aid of the archeomagnetic method. Results of measurements are presented in tabular form for 21 samples collected in Central Asia and 11 samples collected in Bulgaria. The results are compared with earlier data for the Caucausus and Novgorod, and with other well-known data, both from domestic and foreign sources. A comparison of the variation of inclination of the geomagnetic field for different points on the earth's surface shows that it is possible to study the westward drift using the archeomagnetic method. A comparison of values of the intensity of the geomagnetic field at various points on the surface

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ACCESSION NR: AP5018287

2

verifies the global character of the change in intensity of the magnetic field of the earth as a function of time. "For help in selection of the samples and for archeological consultation, the authors express their deep thanks to scientists of Bulgaria: the Director of the Archeological Museum of the City of Varna M. I. Mirchev, and to coworkers at the Museum: D. I. Dimitrov, and I. Modzharova, to workers of the Archeological Museum of the City of Sofia S. N. Bobchev and P. G. Gakeva and to collaborator of the Museum of History of the City of Sofia M. M. Stancheva. We also thank the scientific workers of the Institute of History of the Academy of Sciences of the UzbSSR: N. S. Grazhdankin, O. V. Obel'chenko, and architect S. N. Yurenev." Orig. art. has: 7 figures, 3 tables, 1 formula.

ASSOCIATION: Institut fiziki zemli Akademii nauk SSSR (Institute of Physics of the Earth, Academy of Sciences, SSSR)

SUBMITTED: 29May64 ENCL: 00 SUB CODE: ES

NO REF SOV: 009 OTHER: 008

dm

Card 2/2

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0

ACC NR: AP6035699 (A) SOURCE CODE: UR/0413/66/000/019/0046/0046

INVENTOR: Gaitman, S. A.; Perepelov, B. M.; Ruvinskiy, L. G.; Pivnik, Ye. D.; Petrova, G. N.

ORG: none

TITLE: Method of producing electrodes for chemical current sources. Class 21, No. 186535

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 19, 1966, 46

TOPIC TAGS: electrode design, storage battery

ABSTRACT: An Author Certificate has been issued for a method of producing positive electrodes of the fluosilicic system by galvanically depositing protective and active coatings on iron tape. The electrodes are then stamped and the coatings removed from the current-conducting part of the base by plunging them into an aqueous solution of acetic or nitric acid and hydrogen peroxide, then rinsing them in water before and after depositing the solder. To reduce spashing of electrolyte and to improve operating conditions, an admisture of isoamyl alcohol in a quantity of 10 cm^3 per liter of solution is introduced into this water solution.

SUB CODE: 09, 10/ SUBM DATE: 17May64/

Card 1/1 UDC: 621.3.035.2.002.2

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0

BARABASH-NIKIFOROV, I.I.; LAKOMKINA, O.A.; PETROVA, G.P.

Prolonged keeping of a desman in a cage for experimental purposes. Zool. zhur. 43 no.10:1572-1575 '64. (MIRA 17:12)

1. State University of Voronezh.

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0

PETROVA, G.P.; NEMOYTIN, M.A.

Experience with the use of the method of emission spectrum analysis for the determination of relative magnesium concentrations in bacterial cultures. Biofizika 8 no.6:731-735 '63. (MIRA 17:7)

1. Voyenno-meditsinskaya orden Lenina akademiya imeni S.M. Kirova.

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0

NIKOLAYEV, V.G.; PETROVA, O.P.

Use of the precipitation in agar reaction for the detection of the anthrax antigen in animal organs. Voen.-med. zhur. no. 1: 53-54 Ja '66 (MIRA 19:1)

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0

L 20053-65 EEC(b)-2/EPF(n)-2/EPR/EPA(w)-2/EWG(k)/EWI(1)/EWT(m)/EEC(t)/EWP(b)/EPA(sp)-2/T/EWA(m)-2/EWP(e)/EWP(t)/ Pi-4/Po-4/Ps-4/Pu-4/Pz-6/Pab-10/ LJP(c)/AEDC(b)/SSD/AFWL/ASD(p)-3/AFETR/ESD(gs)/ESD(si) AT/WH/JD/JG/MLK

ACCESSION NR: AT4048009 S/0000/64/000/000/0073/0079

AUTHOR: Petrova, G.P.

B+1

TITLE: A study of some of the physical properties of an argon jet

SOURCE: AN SSSR. Energeticheskiy institut. Fizicheskaya gazodinamika i svoystva gazov pri vy*sokikh temperaturakh (Physical gas dynamics and properties of gases at high temperatures). Moscow, Izd-vo Nauka, 1964, 73-79

TOPIC TAGS: jet flame, plasma jet, argon jet, plasma generator, jet temperature distribution, jet potential distribution

ABSTRACT: The author describes plasma-generating equipment using an argon arc struck between a water-cooled cylindrical copper anode and an 8 mm diameter carbon or tungsten cathode. The 60 V DC supply could supply currents from 60 to 200 amps, and the gas was at 1.9-2 atm. pressure. The radial distribution of temperature in the plasma jet was measured spectroscopically to 6% using the method of relative intensities, and several copper lines, the maximum value being ~7500K. The jet was photographed with a high-speed movie camera (2500 frames/sec.) which showed the jet to be very inhomogeneous and to vary in dimensions with time, the length oscillating at a frequency of several

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ACCESSION NR: AT4048009

hundred per sec. Scanning the jet revealed light spots appearing at a rate of about 50,000 per sec. The light fluctuation rate was obtained by Weiss' method for different operating conditions, the results obtained being in agreement (order of magnitude) with those of Weiss and others. Probe current measurements were recorded by a loop oscillograph along with time markers and signals from two metal contacts, used to measure the speed at which the probe was moved through the plasma (150-200 mm/sec. so that the probe, 0.2 mm in diameter and 1 mm long, should not become excessively hot). Currents in the plasma at various distances from the anode were graphed so as to give a qualitative picture of the potential distribution in the plasma. The jet was also positioned in a steady homogeneous field variable to 7000 gauss and the potential distribution was measured at 8 mm from the anode, a strong interaction being noted as the field was increased from 0 to 5000 gauss. The radial temperature distribution was measured with a 100 amp. current at 60 V and the temperature at the axis was ~7000K. Orig. art. has 12 figures and 1 formula.

ASSOCIATION: Energeticheskiy institut AN SSSR (Power Engineering Institute, AN SSSR)

SUBMITTED: 06Mar64 ENCL: 00 SUB CODE: ME, PR

NO REF SOV: 002 OTHER: 003

Card 2/2

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0

VOLK, V.Yu.; PETROVA, G.P.

Using an interferometer with resolving power in determining relative forces of manganese triplet oscillators. Sbor.st.LITMO no.47: 81-90 '59. (MIRA 16:10)

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0

PETROVA, G.P., aspirant

Clinical significance of dysproteinemic changes in tuberculous meningitis in children. Kazan.med.zhur. no.5:42-44 S-O '62. (MIRA 16:4)

1. Kafedra gospital'noy pediatrii (zav. - prof. Ye.N.Korovayev [deceased]) Kazanskogo meditisnkogo instituta.
(MENINGES--TUBERCULOSIS) (BLOOD PROTEINS)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0

MOLCHANOV, Ye.V.; SHVARTS, Z.S.; PETROVA, G.P.; CHERNAVINA, L.F.; TARASENKO, T.I.

Sixtieth birthday of Professor Aleksandr Prokhorovich Parfenov. Vop. kur., fizioter. i lech. fiz. kul't. 26 no.6:563-564 [illegible] (MIRA 15:1)

(PARFENOV, ALEKSANDR PROKHOROVICH, 190[illegible]-)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0

PROKOF'YEV, V.K.; NAGIBINA, I.M.; PETROVA, G.P.

Determination of the absolute values of oscillator forces from the spectral line widths. Opt. i spektr. 8 no.3:376-381 Mr '60. (MIRA 14:5)

(Tin--Spectra)
(Spectrum analysis)

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0

L 00822-67 EWT(1)/EWT(m)/EWP(t)/ETI IJP(c) JD/AT/GD

ACC NR: AT6022650 SOURCE CODE: UR/0000/66/000/000/0096/0100

AUTHOR: Petrova, G. P.

ORG: none

70
B+1
27

TITLE: Measurement of the temperature and density of charged particles of an argon plasma jet

21

SOURCE: AN SSSR. Energeticheskiy institut. Issledovaniya po fizicheskoy gazodinamike (Studies of physical gas dynamics). Moscow, Izd-vo Nauka, 1966, 96-100

TOPIC TAGS: electron density, plasma jet, argon, hydrogen plasma

ABSTRACT: The arc jet of partially ionized argon was studied by spectroscopically determining the electron density in the plasma from the broadening of hydrogen lines, and calculating the temperature of the argon-hydrogen mixture (98.5% Ar + 1.5% H_2) from the electron density. The jet spectra were recorded with an ISP-51 spectrograph. The distribution of the density of charged particles across the plasma jet at any of its cross sections was determined. The following equation was used to calculate the temperature:

$$\frac{N_e kT}{p} = x_e = \left(0{,}025\frac{K_p(H^+)}{p} + \frac{K_p(Ar^+)}{p}\right)^{1/2},$$

where N_e are experimental values of the electron density; x_e, x_{H^+}, x_{Ar^+} are mole frac-

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ACC NR: AT6022650 0

tions of electrons, hydrogen ions, and argon ions, and $K_D(H^+)$ and $K_D(Ar^+)$ are equilibrium constants. From the temperature values thus calculated, the distribution of the integral temperature in a given cross section of the plasma jet was evaluated. It is concluded that such two major parameters of a plasma jet as the temperature and electron density can be reliably determined. Comparison of measurements of T and N_e for two variants of the arc chamber anode (diaphragm anode and nozzle anode) shows that an arc jet discharged into the atmosphere from a conical nozzle has a much lower temperature and electron density than a jet formed in the short diaphragm anode. Orig. art. has: 6 figures and 4 formulas.

SUB CODE: 20/ SUBM DATE: None/ ORIG REF: 004/ OTH REF: 001

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0

S/075/60/015/003/014/022/XX
B005/B066

AUTHORS: Lukin, A M and Petrova, G S

TITLE: A New Reagent for Lead

PERIODICAL: Zhurnal analiticheskoy khimii, 1960, Vol 15, No 3, pp. 295 - 298

TEXT: When studying the analytical properties of the cadmium reagent Kadion (Ref 1) the authors observed that compound (I) gave a color reaction with lead ions (Ref 2) Since this compound, however, has no practical importance for the photometric determination of lead the authors substituted the arsonic acid group for the sulfo group being in o-position with respect to the triazene grouping The arsonic acid group reacts quantitatively with lead ions In this way, compound (III) was obtained for the first time Besides three further compounds with similar structure (IV), (V), (VI) were produced for the first time and tested for their capability of yielding color reactions with lead M P Khoroshkova took part in the spectrophotometric measurements The enclosed table shows the characteristics obtained Compound (III), 4"-nitrobenzene 1",4-diazo-

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A New Reagent for Lead

S/075/60/015/004/014/018/XX
B005/B066

amino-1,1'-azobenzene-2"-arsono 4 sulfonic acid forms with lead ions in a solution of sodium tetraborate a stable colored complex compound whose solutions obey Beer's law The optical densities were measured in a FEK M (FEK M) colorimeter by using a green filter The absorption maximum of the complex at pH ~ 9 is at 500 mμ (Fig 1) Copper zinc, cadmium, cobalt nickel, lanthanum, uranium, and manganese (II) also form colored compounds with the reagent (III) Alkaline and alkaline earth metals, further magnesium, arsenic, bismuth, tungsten, thallium (III) germanium, and gallium in amounts of 50γ do not disturb the determination of 10γ lead nor do 25γ chromium, tellurium or yttrium 10γ aluminum, beryllium or tin(IV) 5γ thorium and 2γ scandium Iron, titanium zirconium vanadium and molybdenum disturb Smaller iron quantities (up to 20γ) may be masked by adding a 5% ammonium oxalate solution, higher quantities have to be removed in the form of the thiocyanate by extraction with isoamyl alcohol The above mentioned effects of foreign ions were studied by K A Smirnova The reagent (III) is suited for the visual and photometric lead determination and may as well be used as metal indicator in the complexometric determination of lead and zinc The new reagent has compared with the frequently used dithizon the advantage that in the determination of lead

Card 2/5

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A New Reagent for Lead

S/075/60/015/003/014/033/XX
B005/B066

in the presence of other elements no cyanides are necessary for masking (copper may be masked by thiourea, zinc by potassium ferrocyanide). In addition to lead and zinc, also cadmium, uranium, lanthanum, and other elements can be determined by the new reagent. By means of the method of isomolar series (Ref.9) the authors found the reagent to react with lead in the molar ratio of 1 : 1. The reaction product has the structural formula (VII). The color change in the reaction is due to the reaction of lead with the arsonic acid group and with the triazene grouping of the reagent. Finally, the authors describe the synthesis of the reagent (III). 4-nitroaniline-2-arsonic acid is diazotized and then coupled with the sodium salt of the 4-amino-azobenzene-4'-sulfonic acid at 10-12°C. The reagent separates in the form of cherry-red crystals which may be recrystallized from acetone-water (1:1). N. A. Novikovskaya developed a semimicromethod of determining arsenic in the compound synthesized. The new reagent is supplied under the name of Sulfarsazen (sul'farsazen) by the authors' institute to the chemical industry and has already been tested satisfactorily by many organizations (Ref.8). There are 3 figures, 1 table, and 10 references: 8 Soviet, 1 Indian, and 1 Australian.

Card 3/5

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A New Reagent for Lead

S/075/60/015/003/014/031/XX
B005/B066

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut khimicheskikh reaktivov, Moskva (All-Union Scientific Research Institute of Chemical Reagents, Moscow)

SUBMITTED: February 26, 1958

Таблица*

Характеристика $2 \cdot 10^{-5}$ М растворов мышьяксодержащих соединений в 0,05 М растворе $Na_2B_4O_7$ (pH~9)

Соединение 1	Чувствительность в γ Pb в 5 мл 2	Максимум поглощения в мμ 3		Сдвиг максимума в мμ 4
		в отсутствие Pb а	в присутствие Pb б	
III	0,5	420	500	80
IV	1	420	480	60
V	5	419	450	30
VI	1	419	430	20

Legend to the table: Characteristics of $2 \cdot 10^{-5}$M solutions of arsenic-containing compounds in a 0.05M $Na_2B_4O_7$ solution (pH ~9)
1) Compound, 2) Sensitivity γPb/5ml, 3) Absorption maximum of the solutions mμ, 3a) in the absence of Pb, 3b) in the presence of Pb, 4) Shift of the maximum mμ

Card 4/5

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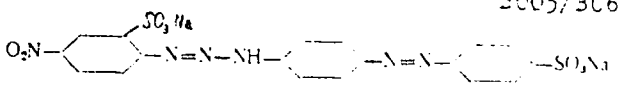
B005/B066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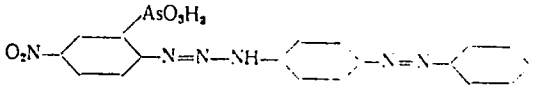
(II)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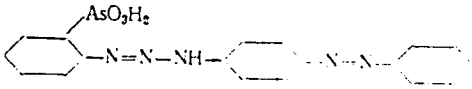
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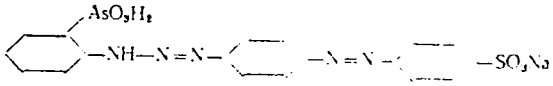
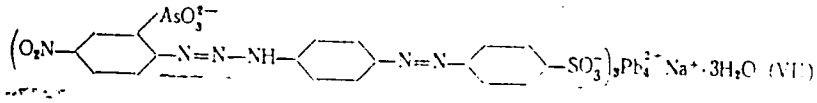

(VI)


(VII)

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0

LUKIN, A.M.; PETROVA, G.S.

Interaction between sulfarsazene and lead. Zhur. ob. khim. 31 no.4:1254-1259 Ap '61. (MIRA 14:4)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut khimicheskikh reaktivov.

(Lead organic compounds)
(Arsenic organic compounds)

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0

LUKIN, A.M.; PETROVA, G.S.

Arsazene. Met. poluch. khim. reak. i prepar. no.6: 14-16 '62.

Sulfarsazene. Ibid.:16-18

Cadion prepared by the Institute of Chemical Reagents. Ibid.:18-20 (MIRA 17:5)

1.Vsesoyuznyy nauchno-issledovatel'skiy institut khimicheskikh reaktivov i osobo chistykh khimicheskikh veshchestv.

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0

LUKIN, A.M.; VAYNSHTEYN, Yu.I.; DYATLOVA, N.M.; PETROVA, G.S.

Interaction of sulfarazen with lead ions. Zhur.anal.khim. [illegible] no.2:212-217 Mr-Ap '62. (MIRA [illegible])
(Lead--Analysis)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0

LUKIN, A.M.; PETROVA, G.S.

New reagent for lead. Zhur.anal.khim. 15 no.3:295-298 My-Je '60. (MIRA 13:7)

1. All-Union Scientific Research Institute of Chemical Reagents, Moscow.
(Lead—Analysis)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0

LUKIN, A.M.; KARANOVICH, G.G.; PETROVA, G.S.

New reagent for the quantitative colorimetric determination of cadmium - cadion IHRA (water-soluble). Trudy IREA no.23: 55-62 '59. (MIRA 13:7)
(Cadion) (Cadmium--Analysis)

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0

LUKIN, A. M.; CHERNAYA, [illegible]; [illegible]

Extraction determination [illegible]
Zav.lab. 28 [illegible]

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Moscow. Vsesoyuznyy nauchno-issledovatel'skiy institut khimicheskikh reaktivov

Veshchestva vysokoy chistoty i reaktivy, sbornik statey (High Purity Substances and Reagents; Collection of Articles) Moscow, Gokhimizdat, 1960. 186 p. (Series: Its: Trudy, vyp. 2). Errata slip inserted. 1,700 copies printed.

Sponsoring Agency: USSR. Sovet Ministrov. Gosudarstvennyy komitet po khimii.

Ed.: Yu.V. Lyubin; Tech. Ed.: Ye.I. Shpak. Editorial Board of Series: V.G. Brodskiy, V.M. Dzimko, P.F. Lastovskiy (Resp. Ed.), A.M. Lukin, G.E. Makhel'ye, G.I. Mikhaylov, S.A. Pevzner (Deputy Resp. Ed.), and I.G. Shafran.

PURPOSE: This book is intended for personnel of chemical research and industrial chemical laboratories.

COVERAGE: The book contains 16 articles by affiliates of the Scientific Research Institute for Chemical Reagents (NIKHI) treating methods which may be adapted by different branches of industry in producing [illegible] high purity inorganic and organic substances of high purity. Figures, tables, and references accompany each article. No personalities are mentioned.

TABLE OF CONTENTS:

Spasskiy, N.S., V.K. [illegible], I.N. [illegible], T.G. Vakhrina, and V.S. Aleksandrov. Zone-Refining of A[illegible] 5

Mikhaylova, L.A., R.L. [illegible], R.I. Lastovskiy, and F.A. [illegible]. The preparation of High Purity [illegible] 11

Angelov, I.I., and V.S. [illegible]. The Preparation of High Purity Lithium Fluoride 14

Angelov, I.I., and S.I. [illegible]. The Problem of Preparing High Purity Crystalline Barium and Calcium Fluorides 19

Angelov, I.I., and V.S. [illegible]. The Preparation of High Purity Arsenic Anhydride 25

Lar'ye, S.S., I.I. Angelov, and V.A. [illegible]. The Preparation of High Purity Potassium Iodide 29

Angelov, I.I., S.A. Pevzner, and M.V. [illegible]. The Preparation of Spectrally Pure Bas. [illegible] Chloride, Sodium Carbonate, and [illegible] 31

Angelov, I.I., S.A. Pevzner, [illegible], and [illegible]. The Problem of Obtaining Spectrally Pure [illegible] and [illegible] 40

Aleksyeyev, V.I. A Colorimetric Method of Producing Selenium Dioxide 47

Lukin, A.M., [illegible], and [illegible]. A New Reagent for the Quantitative [illegible] "Carbon Black" 55

Lukin, A.M., and [illegible]. [illegible] Composition of [illegible] 63

Mikhaylova, L.A., and [illegible] and [illegible]. The Preparation of [illegible] 67

[illegible] 74

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0

[illegible]

AUTHORS: Lukin, A. M., Petrov[illegible], G. S., and Smirnova, K. A.

TITLE: A Method for Quantitative Detection of Lead [illegible] chestvennogo opredeleniya svintsa,

PERIODICAL: Byulleten' izobreteniy, 1958, Nr 6, p. [illegible] USSR

ABSTRACT: Class [illegible] 1, 3[illegible] Nr 11[illegible] of [illegible] mitted to the Committee for Inventions and D[illegible] the Ministers Council of USSR. Detecting lead by [illegible] metering as well as by complexonometer[illegible] "[illegible] metricheskoye") titration with the use of [illegible] agent; simplifying the process and increasing the [illegible] of analysis by using sodium salt of 4"-nitrobenzene [illegible] 4-diazoamino-1,1'-azobenzene-2"-ar[illegible] (obtained by reaction of 4-nitroanilie-[illegible] sodium salt of 1-aminobenzene-4[illegible] and cation-indicator

Card 1/1

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0

BELOV, V.N.; KHEYFITS, L.A.; PETROVA, G.S.

Acetylation of certain aromatic compounds with two tert-butyl groups in the benzine nucleus. Trudy VNIISNDV no.2:9-14 '54. (MLRA 10:7)

(Butyl group) (Aromatic compounds) (Acetylation)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0

LUKIN, A.M.; PETROVA, G.S.

Research in the fields of polycyclic compounds. Part 14: Synthesis of anthraquinone-1-arsonic and -1-phosphonic acid using the diazo method. Zhur. ob. khim. 27 no.8:2171-2174 Ag '57. (MLRA 10:9)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut khimicheskikh reaktivov.
(Anthraquinone) (Arsonic acids) (Phosphonic acids)

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0

PETROVA, G.S.

New reagent sulfarsazene (plumbone IREA) and the results of its practical application. Zav.lab. 26 no.9:1162-1163 '60. (MIRA 13:9)

(Chemical tests and reagents)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0

Country : USSR E
Category: Virology. Bacterial Viruses (Phages)

Abs Jour: Ref Zhur-Biol., No 23, 1958, No 103488

Author : Petrova, G. P.
Inst : -
Title : Variability of Dysentery Microbes under the Influence of Dysentery Bacteriophage

Orig Pub: Sb. Bakteriofagiya. Tbilisi, Gruzmedgiz, 1957, 163-171.

Abstract: Cultures of Shiga dysentery bacillus isolated after lysis was complete (a second growth appeared usually after 48 hours) were different from the original cultures with respect to the phage-resistance in their morphological-cultural, biochemical and serologic properties. In a number of these secondary cultures

Card : 1/2

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0

PETROVA, G.V., studentka V kursa

Methods for calculating the profile of the correction plate in the Schmidt objective. Trudy MIIGAIK no.46:107-114 '61. (MIRA 15:7)

1. Optiko-mekhanicheskiy fakul'tet, kafedra prikladnoy optiki Moskovskogo instituta inzhenerov geodezii aerofotos"yemki i kartografii.
(Aberration) (Telescope, Reflecting)

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0

KIRILOV, M.; PETROVA, I.

Nitrile est[illegible] of [illegible] benz[illegible] and furfur[illegible]le. Doklady BAN [illegible] no.1:[illegible]

1. Predstavien[illegible] [illegible], [illegible] Redakts[illegible] [illegible] "Doklady Bolgar[illegible] [illegible]."

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SVETTSOV, V.; NAUMOV, V.; PETROVA, I.

New books. Grazhd.av. 19 no.9:31 S '62. (MIRA 16:1)
(Bibliography - Aeronautics)

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0

PETROVA, [illegible]

"Biochemistry of [illegible]," [illegible], No. [illegible],

[illegible]; (All-Union Sci. [illegible]

Industry; [illegible] A. [illegible], [illegible]

USSR, [illegible])

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GONCHAROVA, V.I.; ZAV'YALOVA, I.N.; PETROVA, I.A.; ROMANOV, V.V.; RYVKINA, V.B.

[redacted]

Some problems in the hydrology of swamps. Trudy GGI no.60:43-76 '57.
(Swamps) (Hydrology) (MIRA 10:12)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0

PETROVA, I.A.

Formation and distribution of Saperda carcharias L. breeding grounds in the Saval'sk tract. Trudy VIZR no.11:74-84 '58. (MIRA 12:1)

(Poplar--Diseases and pests)

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0

PETROVA, I.A.

Biology of the large poplar borer Saperda carcharias L. (Coleoptera, Cerambycidae). Ent.obozr. 38 no.1:119-128 '59. (MIRA 12:4)

1. Vsesoyuznyy institut zashchity rasteniy, Leningrad.
(Longicorn beetles) (Poplar--Diseases and pests)

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0

PETROVA, I.A.

Role of Saperda carcharias L. in the drying up of poplar forests in the Savala Forestry and measures for improving the condition of stands. Trudy VIZR no.14:31-42 '60. (MIRA 14:2)
(Voronezh Province—Longicorn Beetles)
(Poplar—Diseases and pests)

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0

PETROVA, I.A. (Yerevan)

Effect of preparations of the adrenal cortex on the development of sex organs in female white rats [with summary in English]. Probl. endok. i gorm. 3 no.6:44-48 N-D '57. (MIRA 11:3)

1. Iz akusherako-ginekologicheskoy kliniki (dir.-prof. A.M.Agaronov) Yerevanskogo meditsinskogo instituta.
(ADRENAL CORTEX, extracts,
eff. on female genitalia in rats (Rus)
(GENITALIA, FEMALE, effect of drugs on,
adrenal cortex extracts in rats (Rus)

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0

SERGIYEVSKIY, V.M., PETROVA, T.A.

Basic characteristics of the development of tectonic patterns, the igneous activity of the Ural Mountains, and the characteristics of mineralization. Trudy VSEGEI 86:3-33 '62. (MIRA 17:11)

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0

PETROVA, I.A.

Colpocytology in incomplete pregnancies. Izv. AN Arm. SSR. Biol. nauki 13 no.4:37-44 Ap '60. (MIRA 13:8)

1. Akushersko-ginekologicheskaya klinika Yerevanskogo meditsinskogo instituta.

(PREGNANCY, COMPLICATIONS OF)

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001240520016-0

PETROVA, I.A.

Colpocytology in normal pregnancies. Izv. AN Arm. SSR. Biol. nauki 13 no.8:87-95 Ag '60. (MIRA 13:9)

1. Akushersko-ginekologicheskaya klinika Yerevanskogo meditsinskogo instituta.
(PREGNANCY--SIGNS AND DIAGNOSIS)

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KRUTIKOV, K.T., inzh.; GARINOV, K.A., kand. tekhn. nauk; ITTENBERG, I.A., kand. tekhn. nauk; prinimali uchastiye: VAKHTUROV, A.N., starshiy nauchnyy sotrudnik; VOLKOV, M.V., starshiy nauchnyy sotrudnik; KURTSMAN, L.B., starshiy nauchnyy sotrudnik; BOGATYREVA, M.I., mladshiy nauchnyy sotrudnik; ZABOLOTNEVA, G.K., mladshiy nauchnyy sotrudnik; NOVIKOVA, V.V., mladshiy nauchnyy sotrudnik; ALEKSEYEVA, T.I., mladshiy nauchnyy sotrudnik; PETROVA, I.A., mladshiy nauchnyy sotrudnik; SEDEL'NIKOVA, A.F., mladshiy nauchnyy sotrudnik; KATKOVA, T.I., inzh.; ZELENKOV, P.A., inzh.; SIDOROVA, L.N., starshiy laborant; KALASHNIKOVA, V.M., starshiy laborant; VOYEVODINA, A.Ye., starshiy tekhnik; USPENSKAYA, M.B., starshiy tekhnik; YEFIFANOV, V.K., starshiy tekhnik

[Organization of the shipping of transit cargoes on the Volga-Baltic Sea Waterway.] Organizatsiia perevozok tranzitnykh gruzov po Volgo-Baltiiskomu vodnomu puti. Moskva, Transport, 1965. 109 p. (Moscow. TSentral'nyi nauchno-issledovatel'skii institut ekonomiki i ekspluatatsii vodnogo transporta. Trudy, no.40).

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PHASE I BOOK EXPLOITATION 348

Irodov, Roman Dmitri'yevich

Raschet peregruzok i uglov krena samoleta pri dvizhenii po prostranstvennoy trayektorii (Analysis of Load Factors and Angles of Bank of an aircraft Moving Along a Three-dimensional Flight Path) Moscow, Oborongiz, 1957. 22 p. (Tsentral'nyy aero-gidrodinamicheskiy institut. Trudy, vyp. 702) Number of copies printed not given.

Ed.: Petrova, I. A.; Tech. Ed.: Lebedeva, L. A.; Chief Ed.: Latynin, Ye. V.

PURPOSE: This monograph is intended for engineers and scientific workers concerned with problems of aircraft dynamics.

COVERAGE: The author gives formulas which relate the parameters characterizing the flight conditions of an aircraft (speed, load factor, and angle of bank) to the characteristics of its flight path (flight-path angle, curvature, and position of the osculating plane). These formulas permit computation of the load factor and the angle of bank of an aircraft moving along any given three-dimensional flight path. By the method of differential geometry, the

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position of the osculating trihedral formed by the planes of coordinate systems is determined for every point of the flight path, and the invariants of the curve - the radius of curvature and the twist - are calculated. With the aid of the data obtained the load factors of the aircraft and the angles of bank at every point of the flight path are computed. Thus, having obtained the load factor, we can determine the required value of the aircraft lift coefficient, the longitudinal control efficiency required for balance, and also the engine thrust necessary to assure the motion of an aircraft with given speed and load factor. There is 1 Soviet bibliographic reference (footnote), 14 figures, and an Appendix containing 5 tables which show the relations between various coordinate systems.

Card 2/3

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Analysis of Load Factors (Cont.) 348

TABLE OF CONTENTS:

Introduction 3

1. Coordinate System and Equations of Aircraft Motion 5
2. Equations of the Flight Path of an Aircraft 9
3. Connection of Aircraft Load Factor and Bank With Flight-path Characteristics 12
4. Examples of Application of the Formulas Obtained 19

Conclusions 21

Appendix 22

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