L 13703-63 EWT(1)/EDS AFFTC/ASD

ACCESSION NR: AP3003516 S/0020/63/151/001/0122/0124

AUTHORS: Dmitriyevskiy, O. D.; Terenin, A. N.(Academician) 51

TITLE: Analysis of intermolecular electron transfer processes during pulsed illumination

SOURCE: AN SSSR. Doklady*, v. 151, no. 1, 1963, 122-124

TOPIC TAGS: pulsed illumination, electron transfer, wavelength

ABSTRACT: The absorption spectra of intermediate products, vanishing at the instant of photo-impulse, were registered by the photoelectric labor-intensity method of repeated oscillogram with step variation in the wavelength. The results are given by 2 figures which are discussed in detail. Orig. art. has: 2 figures.

ASSOCIATION: none

SUBMITTED: 02Apr63 DATE ACQ: 30Jul63 ENCL: 00

SUB CODE: PH, CH NO REF SOV: 001 OTHER: 005

Card 1/1

L 49016-65 EWT(1)/EPA(w)-2/EEC(t)/EWP(1) Pi-4/Pz-6 IJP(c) AT

ACCESSION NR: AR5012286 UR/0058/65/000/003/D075/D075

SOURCE: Ref. zh. Fizika, Abs. 3D604

AUTHOR: Terenin, A. N.; Dmitriyevskiy, O. D.; Shakhverdov, P. A.

TITLE: Kinetic spectroscopy of intermolecular electron migration affected by a photoimpulse

CITED SOURCE: Tr. Komis. po spektroskopii. AN SSSR, vyp. 1, 1964, 52-63

TOPIC TAGS: electron transfer, electron migration, molecular ion radical, molecule photoexcitation

TRANSLATION: The generation of positive and negative molecular ion radicals is investigated. These radicals appear in liquid solutions and solid [illegible] pulsed photoexcitation of one of the components of a binary solution. [illegible] of spectral equipment were used in combination with pulsed photoe[illegible] duration of 2.5 and 40 μsec. Spectra of positive ion radicals [illegible] donors with respect to photoexcited molecules appeared briefly [illegible] versible fade-out of the absorption bands of the original molecule [illegible] of absorption bands of its triplet state. An absorption spectrum, [illegible]

Card 1/2

L 49016-65
ACCESSION NR: AR5012285

for a bonding negative ion radical which has accepted an electron, appeared simultaneously. The brief appearance of positive ion radicals of the photostimulated compounds was established in other binary systems. The coincidence of duration of intermediate ion forms of molecules with the lifetime of triplet states of photo-excited molecules indicates that these states participate in electron transfer processes.

SUB CODE: NP, OP ENCL: 00

Card 2/2

ACCESSION NR: AP4039710 S/0051/64/016/006/1061/1062

AUTHOR: Dmitriyevskiy, O. D.

TITLE: Ultrafast photoelectric spectrometer

SOURCE: Optika i spektroskopiya, v. 16, no. 6, 1964, 1061-1062

TOPIC TAGS: spectrometer, photoelectric spectrometry, high speed spectrometry, absorption spectrum, photochemical reaction

ABSTRACT: The spectrometer described employs mechanical scanning of the spectrum with three mirrors rotating in opposite directions (O. D. Dmitriyevskiy, Author's certificate No. 625090'26 of 13 April 1959), as previously proposed by L. A. Samurov (Opt.-mekh. promy*shl. No. 2, 121, 1956) for ultrafast photography. The spectrometer model constructed registered the section of the spectrum from 450 to 740 millimicrons within 40 microseconds, with the mirrors rotating at a comfortable 3000 rpm. An autocollimation prism monochromator was used.

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ACCESSION NR: AP4039710

The resolution of the array is approximately 4 millimicrons. The radiation receiver was an FEU-27 photomultiplier. This spectrometer was used to obtain absorption spectra of various rapid reactions, particularly for the intermediate products of photochemical reactions induced by powerful light flashes. "The author is deeply grateful to A. N. Terenin for continuous interest and guidance." Orig. art. has: 2 figures.

ASSOCIATION: None

SUBMITTED: 04Jul63 DATE ACQ: 24Jun64 ENCL: 00

SUB CODE: OP NR REF SOV: 008 OTHER: 002

Card 2/2

DMITRIYEVSKIY, O.D.

Ultrahigh-speed photoelectric spectrometer. Opt. i spektr. 16 no.6:1061-1062 Je '64. (MIRA 17:9)

L 34867-65 EWT(1)/EWI(m)/EPA(w)-2/EEC(t) Pt-4/Pab-10 RM
ACCESSION NR: AP5005057 S/0051/65/018/002/0343/0344

AUTHOR: Dmitriyevskiy, O. D.; Suvel'yev, D. A.; Terenin, A. N.

TITLE: Spectral observation of intermolecular electron transport in dye solvents

SOURCE: Optika i spektroskopiya, v. 18, no. 2, 1965, 343-344

TOPIC TAGS: organic dye, intermolecular electron transport, absorption band, fluorescence quenching

ABSTRACT: A procedure based on the photopulse method, used by one of the authors previously (Dmitriyevskiy, Opt. i spektr., v. 16, 1061, 1964), was applied to the dyes tripaflavine and acridine orange. As in the earlier investigation, the absorption spectrum of the solution in the visible region was swept for 50 μsec with an oscilloscope (duration of the exciting photoflash), using a high-speed photoelectric spectrophotometer described elsewhere (Opt. i spektr., v. 16, 1061, 1964; Tezisy dokl. 15 Soveshch. po spektr., Abstracts of Reports of 15th Conference on Spectroscopy, Minsk, p. 166, 1963). The solvents used were methanol, pyridine, dioxane, dimethyl formamide, acetone, and nitromethane. Positive results were obtained only with acetone and nitromethane. Photoexcitation of the solution in the

Card 1/2

L 34867-65

ACCESSION NR: AP5005057

glass cuvette 20 mm in diameter and 85 mm long was carried out with two flash lamps IFK-2000 with total (electric) flash energy of 400 J, through a filter that limited the excitation only to the absorption band of the dye. Illumination with full light from the flash lamp led to the same results. The results show an absorption peak at 680 mμ, due to the positive ion radical diphenyl amine, with a lifetime approximately 100 μsec. It is confirmed that intermolecular transfer of electrons is aided by the fact that the molecules between which the electron was transferred formed a donor-acceptor pair. It must therefore be taken into account that the solvent serves in this mechanism not only as the dielectric medium, but also as the agent that favors the transport of the electron from the donor to the acceptor. Analogous results were obtained by using acridine orange in lieu of triflavine. Orig. art. has: 1 figure.

ASSOCIATION: None

SUBMITTED: 04Apr64 ENCL: 00 SUB CODE: OP

NR REF SOV: 004 OTHER: 002

Card 2/2

L 5422-66

ACCESSION NR: AP5019774

UR/0051/65/019/002/0310/0311
535.853.24-15

AUTHOR: Dmitriyevskiy, O. D.; Kotlyar, I. P.

TITLE: An ultrafast infrared spectrometer

SOURCE: Optika i spektroskopiya, v. 19, no. 2, 1965, 310-311

TOPIC TAGS: IR spectrometer, IR radiation, radiation detector, monochromator

ABSTRACT: The authors point out first that development of fast infrared spectrometers was hampered in the past by the lack of inertialess detectors. In view of the recent availability of a number of quick-response detectors with time constants 10^{-6}--10^{-8} sec for a very broad portion of the spectrum, they constructed a model of an ultrafast spectrometer of original design (Inventor's Certificate No. 625090/26, 13 April 1959, issued to O. D. Dmitriyevskiy), with three counterrotating mirrors to scan the spectrum. The optical diagram of the monochromator used is shown in Fig. 1 of the Enclosure. The spectrum scanning time in such a monochromator is 5 times less than in a similar monochromator with a single mirror. A quick-response detector is used. With the mirrors rotating at ~3000 rpm, a 1--5 μ interval of the spectrum can be registered in 40 μsec. A sample spectrum is shown. The spectrometer was used to obtain a series of measurements of triplet-triplet absorption in dilute dye solutions subjected to pulsed photoexcitation.

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L 5422-66

ACCESSION NR: AP5019774

"The authors thank A. N. Terenin for continuous interest." Orig. art. has: 2 figures.

ASSOCIATION: none

SUBMITTED: 10May65 ENCL: 01 SUB CODE: OP

NR REF SOV: 006 OTHER: 002

Card 2/3

L 5422-66
ACCESSION NR: AP5019774

ENCLOSURE: 01

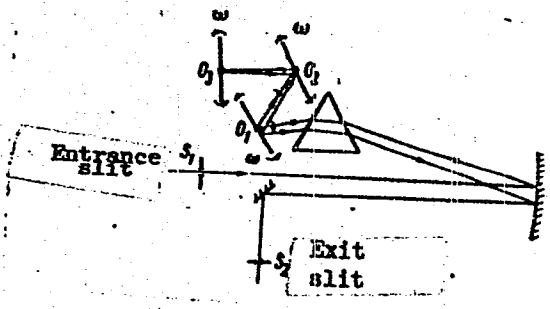

Fig. 1. Schematic optical diagram of the spectrometer

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DMITRIYEVSKIY, O.D.; TERENIN, A.N.

Damping of fluorescence and deactivation of the triplet state of tryptaflavine. Izv. AN SSSR. Ser. fiz. 29 no.8:1270-1273 '65. (MIRA 18:8)

L 01267-66 EWT(l)/EWT(m)/EPF(c)/EWP(j) IJP(c) RM

ACCESSION NR: AP5020781 UR/0048/65/029/008/1271/1273

AUTHOR: Dmitriyevskiy, O. D.; Terenin, A. N.

TITLE: Quenching of the fluorescence and deactivation of the triplet state of acriflavine /Report, 13th Conference on Luminescence held in Khar'kov 25 June to 1 July 1964/

SOURCE: AN ASSR. Izvestiya. Seriya fizicheskaya, v. 29, no. 8, 1965, 1271-1273

TOPIC TAGS: luminescence quenching, electron donor, electron acceptor, organic solvent

ABSTRACT: The quenching of the fluorescence of acriflavine in acetone, nitromethane, and dimethylformamide solutions by nitrobenzene, dinitrobenzene, analine, and diphenylamine was investigated. The solvents were selected because of their high dielectric constants. The quenching followed the Stern-Volmer law and the quenching constants, which ranged from 7 to 750, varied with the donor or acceptor qualities of the quenching agent. The deactivation of the triplet state in acetone solution by diphenylamine was investigated by high-speed spectrometry following activation by a short light flash. The quenching constant of the

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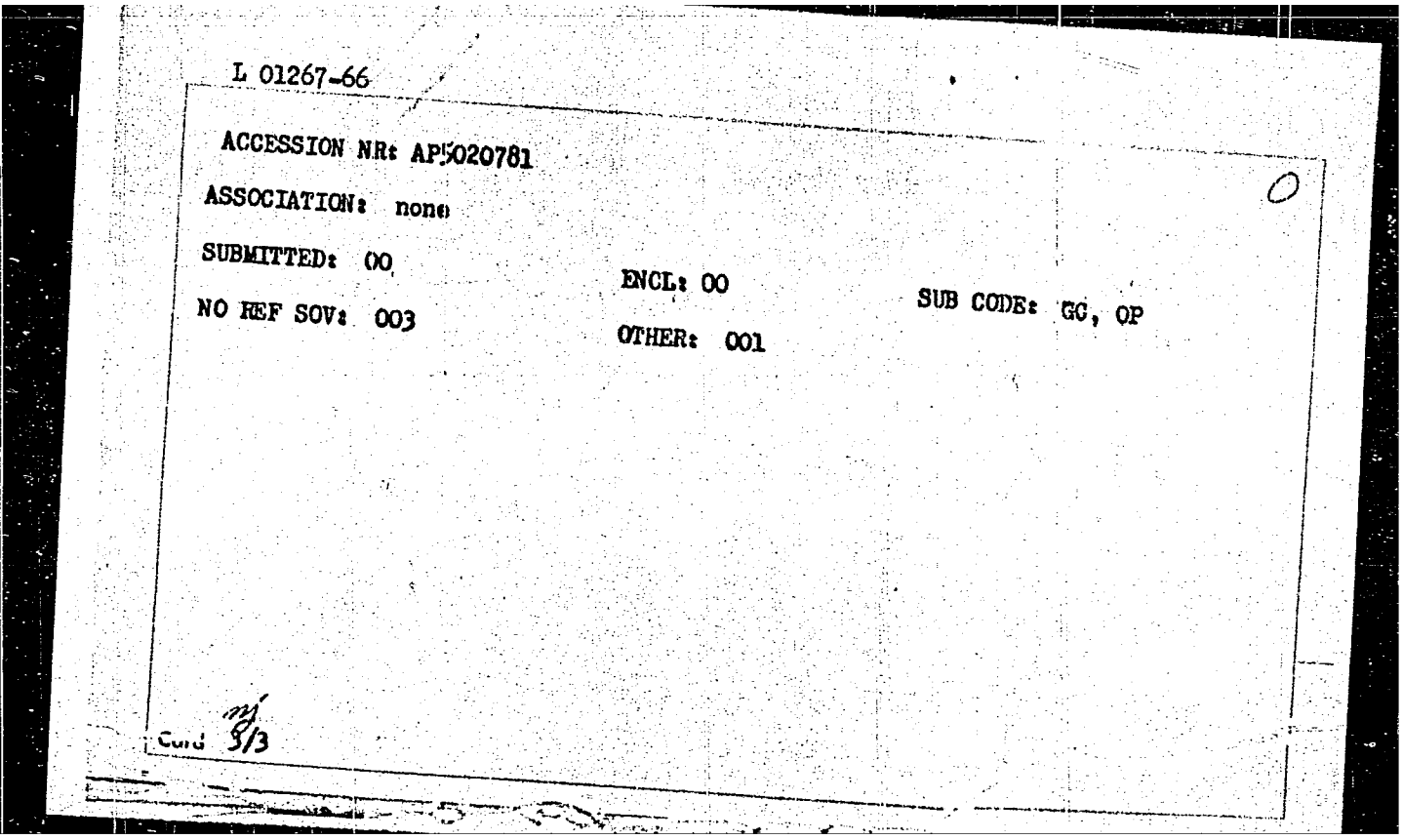
ACCESSION NR: AP5020781

triplet state was about 25 times that of the singlet, but because of the different lifetimes it is concluded that the probability of quenching the singlet state is about 100 times that of quenching the triplet state. In oxygen-free solutions there were observed the absorption band of the positive diphenylamine ion (lifetime 130 microsec) and the triplet-triplet absorption band. The triplet state decayed with a lifetime of 28 microsec. Admission of oxygen to the solution caused the triplet absorption band to disappear, although the diphenylamine ion band remained. It is concluded that the quenching agent gives up its electron via the singlet level, and that the deactivation of the triplet state proceeds by a different mechanism. Attempts were made to detect the diphenylamine ion in other solvents. Success was achieved only in solvents with high dielectric constants. It was possible to detect the ion in nitromethane, but not in dimethylformamide, although the two solvents have nearly identical dielectric constants and dipole moments. It is concluded that the electron donor-acceptor characteristics of the solvent are also important. Orig. art. has: 2 figures and 1 table.



L 01267-66

ACCESSION NR: AP5020781

ASSOCIATION: none

SUBMITTED: 00 ENCL: 00 SUB CODE: GC, OP

NO REF SOV: 003 OTHER: 001

Card 3/3

L 15766-66 EWT(m)/EWP(j) JW/RM

ACC NR: AP5027682 SOURCE CODE: UR/0051/65/019/005/0828/0829

AUTHOR: Dmitriyevskiy, O. D.

ORG: none

TITLE: Phototransfer of electrons from aromatic amines to solvent during pulsed excitation

SOURCE: Optika i spektroskopiya, v. 19, no. 5, 1965, 828-829

TOPIC TAGS: primary aromatic amine, diphenylamine, spectrometer, optic spectrum, electron, phototransfer

ABSTRACT: The intermolecular transfer of electrons from aromatic amines to acridinic dyes was reported previously by the author (DAN SSSR, 151, 122, 1963; and Opt. i spektr., 18, 343, 1965). The direct phototransfer of electrons from excited diphenylamine (DPA) to the solvents (CCl_4, $CHCl_3$, CH_2Cl_2) at a DPA concentration of 10^{-3}-10^{-5}M is now reported. A quartz bulb (20 mm in diameter and 85 mm long), filled with the solution, was inserted into a "light reactor" containing 2 quartz flash bulbs (IFK-2000) with a total energy of 400 joules, and was subjected to a light pulse of 100 μ sec. The spectrums were registered by an

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UDC: 541.141.4+535.34

L 15766-66

ACC NR: AP5027682

ultrarapid photoelectric spectrometer developed in the laboratory (O. D. Dmitrievskiy, Opt, i spektr., 16, 1061, 1964). The solutions were illuminated by light filters UFS-1 + BS-12 to affect the excitation of the amine molecules only. The absorption line of the DPA^+ cation, with a maximum at 680 mμ, appeared in the spectrum taken from the solutions of DPA in CCl_4 and $CHCl_3$. It had a life time of 4 and 16μ sec, respectively. The noticeable absorption of the DPA^+ cation in the 680 mμ region was observed in the CCl_4 and $CHCl_3$ solutions at concentrations of $4-5 \times 10^{-5}$ and $1-2 \times 10^{-5}$, respectively, after illumination with one flash. According to the spectrum, the amine disappeared irreversibly and the solution became yellowish brown after an illumination with only one flash. The DPA^+ cation did not appear after repeated illumination of the heated solutions. A similar effect was observed during experiments with triphenylamine. The author thanks A. I. Terenin for constant attention and guidance. Orig. art. has: 2 figures and 1 formula.

SUB CODE: 20/07/ SUBM DATE: 15Apr65/ ORIG. REF: 005/

2/2 SIK

DMITRIYEVSKIY, P.M.

Angara and Yenisey. Priroda 50 no.1:25-34 Ja '61. (MIRA 14:1)

1. Gidroenergoproyekt, Moskva.
(Angara Valley--Natural resources)
(Yenisey Valley--Natural resources)

DMITRIJEVSZKIJ, P.M. [Dmitriyevskiy, P.M.](Moszkva)

On the Angara and Yenisey Rivers. Term tud kozl 5 no.6:253-256 Je '61.

DMITRIYEVSKIY, P.M., inzh.

Integrated utilization of the Angara River. Gidr. stroi. 32 no.1: 1-8 Ja '62. (MIRA 15:3)
(Angara Valley--Hydroelectric power stations)

DMITRIYEVSKIY, P.Ye.; BOGDANOV, N.G.

New device for testing core mixtures for rupture. Lit. proizv. no.1: 21-22 Ja '58. (MIRA 11:2)
(Coremaking) (Sand, Foundry--Testing)

DMITRIYEVSKIY, S. (Leningrad); YEZHOVA, D. (Leningrad); ARSHAVSKIY, M., sovetsnik yustitsii (Tyumen'); GALEYEV, A.

Editor's mail. Sov. torg. 36 no.3:42-43 Mr '63. (MIRA 16:3)

1. Nachal'nik Zheleznodorozhnogo upravleniya rabochego snabzheniya Yuzhno-Ural'skoy zheleznoy dorogi, Chelyabinsk.
(Retail trade) (Railroads--Dining-car service)

DMITRIYEVSKIY, Semen Petrovich; VASIL'YEV, A.I., redaktor; CHANOVSKAYA, I.I., redaktor; ROSTOV, G.I., tekhnicheskiy redaktor

[Pickling and preserving cabbage] Kvashenie i khranenie kapusty. Pod red. A.I.Vasil'eva. Moskva, Gos.izd-vo torg.lit-ry, 1956. 52 p. (Cabbage--Preservation) (MLRA 10:10)

DMITRIYEVSKIY, S.V. (Ryazan')

History of Russian dermatology. Vest.derm. i ven. 32 no.3:58-60 '58 (MIRA 11:8)

(DERMATOLOGY, hist.
in Russia, (Rus))

DMITRIYEVSKIY, S. YE.

Category : USSR/General Problems - Method and Technique of Investigation A-4

Abs Jour : Ref Zhur - Fizika, No 1, 1957, No 146

Author : Dmitriyevskiy, S.Ye.
Title : New Instrument to Record Oscillations.

Orig Pub : Nauch. Zap. Kafedry tekhn. distsiplin Mosk. finansov. in-ta, M., 1955, 4-16

Abstract : The article consists of two fundamental divisions: (1) exposition of the theoretical foundations of vibrometry and seismometry; (2) description of a vibrometer developed by the author. The first, basic part comprises a treatment of the fundamentals of the theory of the damped mathematical pendulum, a derivation of the equations for the static and dynamic magnifications of the seismograph, and a discussion of the basic requirements imposed on an instrument for the measurement of vibration of buildings and other constructions (the instrument must not disturb the oscillating mode of the construction under investigation, its parts must not have resonant frequencies within the frequency range under investigation, etc.). The second part gives a schematic description of the instrument proposed by the author as a replacement for the well-known Geiger vibrograph. The instrument consists of two parts: a transducer, making contact with the

Card : 1/2

Category : USSR/General Problems - Method and technique of Investigation A-4

Abs Jour : Ref Zhur - Fizika, No 1, 1957, No 146

investigated vibrating surface, and a short-period galvanometer, serving to record the oscillations (which are transformed by the transducer into alternating electric current) with the aid of a beam of light, recording on a drum covered with light-sensitive material (photo-registered). Three versions of transducers are proposed for the measurement of oscillations of displacement, velocity, and acceleration. In the displacement transducer the constant light flux is modulated with the aid of two gratings, one of which is stationary, and the other reproduces exactly the oscillations of the investigated object. The modulated light is transformed by a photocell into an electric current, the frequency and amplitudes of which correspond to the frequency and amplitude of the measured vibrations. A transducer of the electrodynamic type is recommended for the recording of the velocity of the oscillation. An inertia transducer to make use of the piezoelectric effect of Rochelle salt is recommended for the recording of the acceleration of the oscillation. It is indicated that it is possible to measure velocity and displacement by electric integration of the current by the accelerometer transducer.

Card : 2/2

16(1); 24 PHASE I BOOK EXPLOITATION SOV/2619

Dmitriyevskiy, Sergey Yevgen'yevich, Docent, Candidate of Technical Sciences

Nekotoryye teorii kolebaniy s "sobstvennym zatukhaniyem" i ikh otsenka s tochki zreniya opytnykh dannykh (Some Theories of Vibrations With "Self-Damping" and Their Evaluation from the Point of View of Experimental Data) Moscow, Izd. VZIPP, 1957. 82 p. Errata slip inserted. 200 copies printed.

Sponsoring Agency: Vsesoyuznyy zaochnyy institut pishchevoy promyshlennosti. Kafedra teoreticheskoy i tekhnicheskoy mekhaniki.

PURPOSE: This book is intended for specialists in applied mathematics and for theoretical physicists.

COVERAGE: In this book a study is made of various equations of the damping of vibrations which depend on internal resistance in the material. Such vibrations, according to Academician N.N.

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Davidenkov, are called the vibrations of elastic bodies with "self-damping". The book presents a new theory which takes into account the damping of vibrations as a function of velocity and as a function of displacement, as well as a theory which takes into account damping proportional to a polynomial of the second degree of deformation. There are 184 references: 141 Soviet, 24 English, 14 German, 3 French, and 2 Italian. No personalities are mentioned.

TABLE OF CONTENTS:

AVAILABLE: Library of Congress (TA 355.D55)

DMITRIYEVSKIY, V., inzhener.

Jack for suspending front axles. Avt. transp. 34 no.8: 28 Ag '56. (MLRA 9:10)

(Lifting jacks)

DMITRIYEVSKIY, V.A., inzh.

Preventing corrosion in construction elements of magnesium plants. Stroi. prom. 36 no.3:11-14 Mr '57. (MIRA 11:3)
(Corrosion and anticorrosives) (Magnesium industry)

ODINOKOV, S.D., kand.tekhn.nauk; DMITREVSKIY, V.A., inzh. [deceased]; EYDINOV, Yu.S., inzh., red.

[Instructions for making and using cold bituminous mastics for covering roofs with rolled materials] Ukazaniia po prigotovleniiu i primeneniiu kholodnoi bitumnoi mastiki dlia ustroistva krovel' iz rulonnykh materialov. Moskva, Biuro tekhn.informatsii, 1959. 6 p. (MIRA 13:6)

1. Akademiya stroitel'stva i arkhitektury SSSR. Institut organizatsii, mekhanizatsii i tekhnicheskoy pomoshchi stroitel'stvu. 2. Laboratoriya krovel'nykh i otdelochnykh rabot Nauchno-issledovatel'skogo instituta organizatsii, mekhanizatsii i tekhpomoshchi (for Odinokov, Dmitrevskiy).
(Bituminous materials) (Roofing)

SOV/89-5-3-8/15

AUTHORS: Kikoin, I. K., Dmitriyevskiy, V. A., Grigor'yev, I. S., Kersnovskiy, S. V., Gluzkov, M. Yu, Dubovskiy, B. G.

TITLE: A Test Reactor With Gaseous Fissile Material (UF_6) (Stendovyy reaktor s gazoobraznym delyashchimsya veshchestvom (UF_6))

PERIODICAL: Atomnaya energiya, 1958, Vol. 5, Nr 3, pp. 294-302 (USSR)

ABSTRACT: The reactor is of the heterogeneous type, the moderator consists of metallic beryllium (1 570 kg), and graphite is used as a reflector. The beryllium was available in form of cubes the edges of which had a length of 40 mm. The active zone is a cylinder of 1160 mm diameter and 1080 mm height. The gaseous (not enriched) uranium hexafluoride filled 148 channels which were arranged in form of a quadratic lattice with a spacing of 80 mm. The channels consisted of quadratic aluminum tubes of 40 . 40 . 1 mm. 4, 8, 10, 12, and 14 channels are arranged in a row, one beside the other. The working volume of a channel within the domain of the active zone is 1440 cm^3. The total volume of the active zone is 213 l. The lateral graphite reflector has a thickness of 500 mm, while the thickness of the

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upper and lower reflectors is 600 mm. 12 channels of [illegible] 12 m diameter pass through the upper reflector; they make it possible to feed the active zone with gas. A horizontal and a vertical channels are provided for regulation and switch[illegible]-off. The reactor can be heated from the outside by means of an electrical aggregate of 35 kW. Heating the reactor up to a temperature of 80 - 90° C takes 10 - 15 hours. The reactor is located in a steel casing of 2 500 mm diameter, which can be hermetically sealed. Rubber gaskets are used for sealing. The system for the blowing-in and -out of gas consists of a balloon for uranium-hexafluoride, emergency cistern, a portioning apparatus, and remote-controlled valves. Reactor control is carried out by hand. The regulating rods are steel tubes with a diameter of 22 and 9 mm, which are filled with boron carbide. In August 1957 the reactor became critical for the first time, the quantity of gas amounting to 3 540 ± 40 g UF_6. The maximum power output hitherto attained (due to the biological shield) is 1.5 kW. With this power output a neutron flux of [illegible] $n/cm^2.sec$ was measured in the center of the reactor. The radial distribution of the thermal neutron flux was measured and

Card 2/3

plotted. For the reactivity ϱ the value

$$\varrho = 1{,}35 \cdot 10^{-4} \Delta m g$$

was found. The dependence $\varrho(\tau)$ is plotted (τ denotes the time within which the neutron flux increases up to e-fold its amount). The temperature coefficient was measured and shown in form of a graph. The dissociation rate of the molecules UF_6 was determined as amounting to 0,32 mol/kWh. The addition of chlorotrifluoride shows that working conditions can be found in which stability of radiation of the uranium-hexafluoride in the reactor can be attained. A. M. Susova assisted in assembling the apparatus in collaboration with A. K. Krasin. There are 12 figures and 3 references, 1 of which is Soviet.

DMITREVSKIY, V.A.; KARPOV, G.V.

Experience in constructing a thermal pump. Nauch.-tekh. inform. biul. LPI no.10:58-67 '58. (MIRA 14:3)
(Heat pumps)

21(1), 5(2) SOV/89-6-5-5/33

AUTHORS: Dmitriyevskiy, V. A., Migachev, A. I.

TITLE: Dissociation of the UF_6-Molecule Under the Influence of the Fission Fragments of the Uranium Nucleus (Dissotsiatsiya molekul UF_6 pod deystviyem oskolkov deleniya yader urana)

PERIODICAL: Atomnaya energiya, 1959, Vol 6, Nr 5, pp 533-539 (USSR)

ABSTRACT: The following experiments were carried out: a) Determination of the decay rate of UF_6 after irradiation. The experimental arrangement is described. The sample was irradiated for 33 hours in the RFT-reactor at $0.5.10^{13}$ $n/cm^2.sec$ (constant temperature of the test ampoules: 50°C). As a result, the dependence of the total pressure of the gas and the dissociation of UF_6 on the time of irradiation was obtained (Figs 1, 2). b) Determination of the rate at which the UF_6-molecules are destroyed. The experimental arrangement is described. Solid uranium hexafluoride was irradiated during 16.5 hours in the reactor F-1 at $5.8.10^9$ $n/cm^2.sec$ and 8°C. The results are recorded by curves. c) Investigation as to whether the decay of hexafluoride under irradiation is a reversible process.

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SOV/89-6-5-5/33

Dissociation of the UF_6-Molecule Under the Influence of the Fission Fragments of the Uranium Nucleus

The experimental arrangement is described. Irradiation was carried out in the reactor F-1 in the course of 60 hours with a neutron flux of $\sim 10^{10}$ n/cm^2.sec. A second series of experiments was carried out in the VVR reactor. The results obtained are shown by a graph. d) Determination of the constancy of UF_6 in the presence of surplus fluorine. Summarizingly it may be said that UF_6 decays by neutron irradiation probably according to the equation

$$UF_6 \longrightarrow UF_5 + \frac{1}{2} F_2 .$$

The rate of decay is characterized by the quantity G = 0.5 mol/100 ev or 0.21 mol/h per 1 kw power output (liberated in the gas). It was found experimentally that during irradiation not only a dissociation of UF_6 but also a recombination of the annihilated UF_6-molecules takes place. As a final result an equilibrium concentration forms between the fluorine and the UF_6, which depends on the irradiation power. A mixture of fluorine and uranium-hexafluoride is a

Card 2/3

Dissociation of the UF_6-Molecule Under the Influence of the Fission Fragments of the Uranium Nucleus

radiation-stable compound even at room temperature. It is possible to use it as fuel in a nuclear reactor. There are 6 figures and 12 references, 5 of which are Soviet.

SUBMITTED: October 3, 1958

DMITRIYEVSKIY, V.A.

21(4) PHASE I BOOK EXPLOITATION SOV/2583

International Conference on the Peaceful Uses of Atomic Engergy. 2nd, Geneva, 1958.

Doklady sovetskikh uchenykh; yadernyye reaktory i yadernaya energetika. (Reports of Soviet Scientists; Nuclear Reactors and Nuclear Power) Moscow, Atomizdat, 1959. 707 p. (Series: Its: Trudy, vol. 2) Errata slip inserted. 8,000 copies printed.

General Eds.: N.A. Dollezhal, Corresponding Member, USSR Academy of Sciences, A.K. Krasin, Doctor of Physical and Mathematical Sciences, A.I. Leypunskiy, Member, Ukrainian SSR Academy of Sciences, I.I. Novikov, Corresponding Member, USSR Academy of Sciences, and V.S. Fursov, Doctor of Physical and Mathematical Sciences; Ed.: A.F. Alyab'yev; Tech. Ed.: Ye. I. Mazel'.

PURPOSE: This book is intended for scientists and engineers engaged in reactor designing, as well as for professors and students of higher technical schools where reactor design is taught.

COVERAGE: This is the second volume of a six-volume collection on the peaceful use of atomic energy. The six volumes contain the reports presented by Soviet scientists at the Second International Conference on Peaceful Uses of Atomic Energy, held from September 1 to 13, 1958 in Geneva. Volume 2 consists of three parts. The first is devoted to atomic power plants under construction in the Soviet Union; the second to experimental and research reactors, the experiments carried out on them, and the work to improve them; and the third, which is predominantly theoretical, to problems of nuclear reactor physics and construction engineering. Yu. I. Koryakin is the science editor of this volume. See SOV/2081 for titles of all volumes of the set. References appear at the end of the articles.

PART II. EXPERIMENTAL AND RESEARCH REACTORS

PART III. PHYSICS AND ENGINEERING OF REACTOR DESIGN

499

21 (9)

AUTHORS: Dmitriyevskiy, V. A., Grigor'yev, I. S. SOV/89-7-1-5/26

TITLE: Determination of the Critical Mass and of Neutron Flux Distribution by the Method of Physical Model Representation (Opredeleniye kriticheskoy massy i raspredeleniya potoka neytronov metodom fizicheskogo modelirovaniya)

PERIODICAL: Atomnaya energiya, 1959, Vol 7, Nr 1, pp 27 - 32 (USSR)

ABSTRACT: The new method is based upon the fact that by means of a model not containing any fissile material it is possible experimentally to determine both the critical mass and the neutron flux distribution of a reactor that is newly to be projected. The operational channels of the model are filled with a neutron absorber which imitates the fissile material with its neutron absorption cross section. The formation of fast fission neutrons is imitated by means of a neutron source, which is shifted in stages along the operational channel. The distribution of the thermal neutron flux is measured by means of a detector (e.g. dysprosium oxide) which reacts to thermal neutrons. If the strength of the neutron preparation and the absolute magnitude of the neutron flux are known, it is possible to calculate the critical mass of the planned reactor from the formula given.

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Determination of the Critical Mass and of Neutron Flux Distribution by the Method of Physical Model Representation

SOV/89-7-1-5/26

The critical mass of a reactor working with uranium hexafluoride, which is determined from the model experiment, agrees well with the critical mass measured when starting the reactor. Other measuring results obtained with a simple water reactor model with a cylindrical active zone of 52 cm height and 25 cm radius are shown graphically. The active part of the reactor consists of 37 aluminum tubes, which were lined with strong paper, and on to its surface boron carbide had been applied by means of a glutinant. The whole was then suspended in a cylindrical aluminum vessel (diameter 800 mm, height 800 m, distance between the aluminum tube and the bottom of the vessel 120 mm). The vessel was filled with ordinary water. When measuring flux distribution, each channel was divided according to its height into 10 equal zones, and into each of these cells, numbering 370 in all, the neutron source for 5 s was introduced. Besides determining the critical mass and carrying out exponential experiments, also the optimum lattice parameters etc. of a reactor to be projected may easily be determined in a preliminary manner. The method is very simple and requires no fissile ma-

Card 2/3

terial; a Po-α-B-neutron source with $3 \cdot 10^6$ n/sec suffices for these experiments. There are 6 figures and 5 references, 3 of which are Soviet.

SUBMITTED: November 18, 1958

DMITRIYEVSKIY, V. A. [redacted]

mit

$$Z(y) = \int_{-\infty}^{y} \frac{e^t}{t}\,dt - \frac{e^y}{y} - \frac{e^y}{y^2}.$$

Addiert man J_0 und J_1 und berücksichtigt $\Phi_0/L = -(\partial\Phi/\partial z)_{z=a}$, so folgt

$$J = -\frac{1}{2}\,\frac{\partial\Phi}{\partial z}\left\{1 + 2\frac{a}{\lambda} + \frac{3}{4}\,\frac{a}{\lambda}\,\frac{aL}{h^2} - \frac{3}{4}\,\frac{a}{\lambda}\,\frac{aL}{(H-h)^2} + \frac{3}{4}\,\frac{a}{\lambda}\,\frac{a}{L}\left[Z\left(\frac{h}{L}\right) - Z\left(-\frac{H-h}{L}\right)\right]\right\}\pi a^2.$$

Wie man zeigen kann, beträgt der zusätzliche Neutronenstrom in der Nähe des Kanals

$$J = -\frac{1}{2}\,\frac{\partial\Phi}{\partial z}\,\pi a^2 + O\left(\frac{a^2 L^2}{h^4}\,e^{\frac{h}{L}}\right).$$

Man sieht, daß man Übereinstimmung mit den Formeln aus den Arbeiten von BENGSTON und SOBOLEV erzielt, wenn die Bedingungen

$$\frac{a}{\lambda} < 1, \quad \frac{a}{H-h} < 1 \quad \text{und} \quad \frac{a}{L}\,Z\left(\frac{h}{L}\right) < 1$$

erfüllt sind.

Bei großen Werten h/L wird

$$Z\left(\frac{h}{L}\right) = \frac{2e^{\frac{h}{L}}}{\left(\frac{h}{L}\right)^2}.$$

und die letzte Bedingung lautet

$$\frac{aL^2}{h^2}\,e^{\frac{h}{L}} < 1.$$

Abschließend möchte der Autor P. E. STEPANOV für fördernde Diskussionen über die hier betrachteten Probleme danken.

Eingegangen am 24. 6. 1958

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[4] E. GARTOWN, R. PEARCE, J. Nucl. Energy 4 (1957), S. 445.

(Übersetzt und bearbeitet von Dipl.-Phys. J. BRUNSTEIN, Berlin)

Bestimmung der kritischen Masse und der Neutronenflußverteilung mittels der Methode der physikalischen Nachbildung[1])

V. A. DMITRIJEVSKIJ, I. R. GRIGORJEV

Bei der Projektierung von Kernreaktoren, besonders von neuen Reaktortypen, gehen experimentelle Untersuchungen zur Festlegung ihrer Parameter voraus. In der vorliegenden Arbeit wird eine neue Methode zur vorherigen Bestimmung der kritischen Masse eines Reaktors und der Neutronenflußverteilung besprochen, die Methode der physikalischen Nachbildung. Zur Durchführung der Versuche wird ein Reaktormodell benutzt, das keinen Spaltstoff enthält. Die „Arbeits"kanäle des Modells werden mit einem Neutronenabsorber gefüllt, der den Spaltstoff hinsichtlich seines Absorptionsquerschnitts für Neutronen nachbildet. Eine Neutronenquelle, die nacheinander entlang der Kanäle verschoben wird, imitiert die Entstehung schneller Spaltneutronen. Die Verteilung des thermischen Neutronenflusses wird mittels Detektoren gemessen, die auf thermische Neutronen ansprechen. Wenn die Leistung der Quelle und der Absolutwert des Neutronenflusses bekannt sind, so kann man aus dem Versuch auch die kritische Masse des Reaktors ermitteln.

Die Nachbildungsmethode ist an einem Reaktor mit Uranbrennstoff geprüft worden. Der sich aus den Versuchen ergebende Wert der kritischen Masse befindet sich mit dem bei Inbetriebnahme des Reaktors erhaltenen in guter Übereinstimmung.

Außer zu kritischen und Exponentialversuchen kann die vorgeschlagene Methode zur Voruntersuchung zu projektierender Reaktoren, zur Auswahl optimaler Gitterparameter usw. nützlich sein. Die Methode ist sehr einfach und erfordert zu ihrer Anwendung weder Spaltmaterial noch große Neutronenflüsse.

Kurze Beschreibung der Methode

Stellen wir uns ein Reaktormodell vor, dessen geometrische Abmessungen, Konstruktionsmaterialien und dessen Moderator von derselben Art wie in dem zu untersuchenden Reaktor sind. Wir wollen die Kanäle des Modells mit einem Neutronenabsorber füllen, der die Rolle des Spaltstoffs übernehmen soll. Die Form der Energieabhängigkeit des Neutronenabsorptionsquerschnitts für den gewählten Absorber sei möglichst wenig von der entsprechenden Abhängigkeit im Falle des Spaltmaterials verschieden.

Wir wollen zunächst zeigen, daß man in einem solchen Modell mit Hilfe einer Neutronenquelle die Neutronenflußverteilung im Reaktor vollständig wiedergeben kann. Dazu teilen wir die den Absorber enthaltenden Kanäle des Modells in einzelne Zellen auf. In einem Reaktor, der sich im kritischen Zustand befindet, stellt jede derartige Zelle eine lokale Neutronenquelle dar. Die Anzahl der schnellen Neutronen, die von einer Zelle mit der Koordinate r in der Zeit t emittiert werden, ist gleich

$$N_R(r) = \eta\,\Phi_0\,\psi(r)\,\Sigma t; \qquad (1)$$

dabei ist η die Zahl der schnellen Spaltneutronen, die von einem Kern je absorbiertes thermisches Neutron emittiert werden; Φ_0 der thermische Neutronenfluß im Zentrum der aktiven Zone; $\psi(r)$ die auf Eins normierte dimensionslose Flußverteilungsfunktion und Σ der auf eine Zelle bezogene makroskopische Absorptionsquerschnitt des Spaltstoffs für Neutronen.

[1]) В. А. Дмитриевский, И. Р. Григорьев, Определение критической массы и распределения потока нейтронов методом физического моделирования, АЭ 7 (1959), H. 1, S. 27.

Read by mag: 18 Nov 58

3

DMITRIYEVSKIY, V.I.

DMITRIEVSKII, V. I., and K. V. KHOLSHCHEVNIKOV.

Nagnetateli i naduvy aviatsionnykh divigatelei. Moskva, Oborongiz, 1939. 323 p., diagrs.

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NCF

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DMITRIYEVSKIY, V.I.

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[A theory of jet engines; turbomachines] Teoriia reaktivnykh dvigatelei; lopatochnye mashiny. Pod red. B.S.Stechkina. Moskva, Gos. izd-vo obor. promyshl., 1956. 548 p. (MLR& 10:1)
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[Hydromechanics]Gidromekhanika. Moskva, Izd-vo "Morskoi transport," 1962. 295 p. (MIRA 16:3)

1. Leningradskoye vyssheye inzhenernoye morskoye uchilishche im. Admirala S.O.Makarova (for Dmitrevskiy).
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Concerning K.F. Shpital'nik's book "Semigraphical methods for determining the parameters of air in a centrifugal compressor stage." Reviewed by V.I. Dmitrievskii and others. Teploenergetika 11 no.10:93-95 O '64. (MIRA 18:3)

1. TSentral'nyy ordena Lenina nauchno-issledovatel'skiy institut aviatsionnogo motorostroyeniya imeni P.I. Baranova (for Dmitriyevskiy, Etingof). 2. TSentral'nyy aerogidrodinamicheskiy institut imeni N.Ye. Zhukovskogo (for Kukinov). 3. Moskovskoye vysshoye tekhnicheskoye uchilishche (for Beknev). 4. Moskovskiy ordena Lenina energeticheskiy institut (for Sherstyuk).

DMITRIYEVSKIY, V.N., assistent

Method for applying an anastomosis in gastric resection for cancer. Kaz. med. zhur. no.2:41-43 Mr-Ap '62. (MIRA 15:6)

1. Kafedra khirurgii i onkologii (zav. - prof. Yu.A. Ratner) Kazanskogo Gosudarstvennogo instituta dlya usovershenstvovaniya vrachey imeni V.I. Lenina na baze 5-y gorodskoy klinicheskoy bol'nitsy (glavnyy vrach - N.I. Polozova).
(STOMACH—CANCER) (STOMACH—SURGERY)

RATNER, Yu.A.; BASHIROVA, N.G.; DMITRIYEVSKIY, V.N.; YELYASHEVICH, B.L.; KOLSANOV, N.A.; KHARITONOV, R.K.; MUSTAFIN, M.A.

Experience with the use of mechanical suturing in gastric surgery. Khirurgiia 40 no.8:17-23 Ag '64. (MIRA 18:3)

1. Kafedra khirurgii i onkologii (zav. - prof. Yu.A. Ratner) Kazanskogo instituta usovershenstvovaniya vrachey na baze 5-y gorodskoy klinicheskoy bol'nitsy (glavnyy vrach N.I. Polozova).

DMITRIYVSKIY, V.P., DANILOV, V.I., DENISOV, YA.N., ZAPLATIN, N.I., KROPIN, A.A., CHESTNOV, A.V., (U.S.S.R.)

Operation of the 680 MeV machine

CERN-Symposium on High Energy Accelerators and Pion Physics

Geneva 11-23 June 56
In Branch #5

DMITRIYEVSKIY, V. P.

ON A METHOD OF INCREASING THE DENSITY OF AN EXTERNAL PROTON BEAM FROM THE SIX-METER SYNCHROCYCLOTRON, PV. L. D[illegible]ilov, V. P. Dmitriyevskiy, and L. V. Chestnoi [illegible]. Translated from Pribory i Tekh. Eksperimenta, No. 3, [illegible]

The estimation of increasing the average density was performed by comparing the cross sections of the external beam in the absence or presence of the focusing magnetic field. The calculation of the focusing effect of the magnetic field was made on the basis of the analysis of particle motion along the beam trajectory. The focusing field was created in the non-working region of the accelerator's magnetic field with the help of iron masses of certain configurations. (M.H.R.)

DMITRIYEVSKIY, V.P.

DANILOV, V.I.; DMITRIYEVSKIY, V.P.; ZAMOLODCHIKOV, B.I.; KATYSHEV, V.S., [deceased]; KROPIN, A.K.; CHESTNOY, A.V.

Corrections for the median surface of magnetic fields in the six-meter synchro-cyclotron. Prib.i tekh.eksp.no.3:17-22 N-D '56. (MLRA 10:2)

1. Ob"yedinennyy institut yadernykh issledovaniy.
(Cyclotron) (Magnetic fields)

DMITRIYEVSKIY, V.P.

USSR/Nuclear Physics - Installations and Instruments. Methods of Measurement and Research. C-2

Abs Jour : Ref Zhur - Fizika, No 4, 1957, 8513

Author : Dzhelepov, V.P., Dmitriyevskiy, V.P., Katyshev, V.S., Kozodayev, M.S., Meshcheryakov, M.G., Sarakanov, K.I., Chestnoy, A.V.

Title : Particle Guns for High Energy Particles from a Six-Meter Synchrocyclotron and Their Use.

Orig Pub : Atom. energiya, 1956, No 4, 13-21.

Abstract : The authors consider the problem of increasing the efficiency of the six-meter phasotron of the Institute of Nuclear Problems of the Academy of Sciences, USSR. A procedure is described for obtaining and collimating a large number of particle beams, on which several experimental setups can operate simultaneously. Brief descriptions of these beams are given.

Card 1/1

Dmitrievskiy, V. P.

Leading out of a proton beam from a six-meter synchrocyclotron by excitation of radial vibrations. V. P. Dmitrievskii, V. I. Danilov, Yu. N. Denisov, N. L. Zaplatin, V. S. Kats..., A. A. Kropin, and A. V. Chestnoi. *Atom. Energ.* 1957, No. 1, 11-14.—A new method has been developed for leading out and focusing particles from a synchrocyclotron. The theoretical and exptl. investigations include the creation of a nonhomogeneous magnetic field, the calcn. of the magnetic channel, and the focusing of the particles. Adoption of the described method for leading out protons with an energy of 680 m.e.v. resulted in a discharge coeff. of about 4% and an av. no. of ... particles/sec. in the beam emerging from the accelerator. 12 references. A. Kremberger

DMITRYEVSKIY, V.P., DZHELEPOV, V.P., KATYSHEV, V.S., KOZODAYV, M.S., MESHCHERYAKOV, M.G., PONTEKORVO, B., CHESTNOY, A.Y.

"High Energy Particle Beams from the Six Metre Synchrocyclotron and their Utilization," paper presented at CERN Symposium, 1956, appearing in Nuclear Instruments, No. 1, pp. 21-30, 1957

DMITRIYEVSKIY, V.P.

120-2-21/37

AUTHOR: Danilov, V. I., Denisov, Yu. N. and Dmitriyevskiy, V. P.

TITLE: A Differential Electronic Fluxmeter. (Differentsial'nyy Elektronnyy Flyuksmetr.)

PERIODICAL: Pribory i Tekhnika Eksperimenta, 1957, No.2, pp. 74 - 77 (USSR).

ABSTRACT: An instrument for measuring sharply inhomogeneous magnetic fields is described. The probe element consists of two calibrated coils wound in opposition and differing in their characteristics by not more than 0.002%. The rotation of coils, which are both wound on the same former, is achieved with the help of a special current excited winding. The electronic part of the arrangement consists of an integrating network, of an inductively coupled amplifier, of a peak reading voltmeter and of a remote control arrangement. The characteristic constant of the instrument was determined from measurements on a known magnetic field using Equation 4, where N is the flux meter reading. The sensitivity obtained for an instrument, built at the Institute, was 0.027 oersted/cm/division. A mechanical drawing of the coil arrangement and a circuit diagram of the electronic part of the instrument are given. There are 2 Slavic references.

Card 1/2

A Differential Electronic Fluxmeter. 120-2-21/37

SUBMITTED: July, 30, 1956.

ASSOCIATION: Joint Institute for Nuclear Research. (Ob"yedinennyy Institut Yadernykh Issledovaniy).

AVAILABLE: Library of Congress.

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PHASE I BOOK EXPLOITATION SOV/4540

Danilov, V.I., V.P. Dmitriyevskiy, N.L. Zaplatin, V.V. Kol'ga, Liu Nieh-ch'uan, V.S. Rybalko, and L.A. Sarkisyan

Formirovaniye magnitnogo polya tsiklotrona s prostranstvennoy variatsiyey (Production of a Magnetic Field in a Cyclotron With Space Variation) Dubna [Izdatel'skiy otdel Ob"yedinennogo instituta yadernykh issledovanii] 1959. 27 p. 300 copies printed. [PHOTOCOPY]

Sponsoring Agency: Ob"yedinennyy institut yadernykh issledovaniy. Laboratoriya yadernykh problem.

Tech. Ed.: V.R. Sarantseva.

PURPOSE: The publication is intended for nuclear physicists.

COVERAGE: The book analyzes problems associated with the production of a magnetic field in a spiral cyclotron by a system of ring and spiral shims. Calculation of the magnetic field in a system of such shims was based on the assumption of

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Production of a Magnetic Field (Cont.) SOV/4540

uniform magnetization of their volume in the direction of the vertical component of the outer magnetizing field. Technical problems in construction of spiral shims and design characteristics of the pole terminals of the electromagnet are described. The author thanks V.P. Dzhelepov, B.I. Zamolodchikov, L.V. Vasil'yev, Yu. N. Denisov, M.M. Semenov, K.A. Baycher, N.I. D'yakov, N.S. Matyukhin, and A.A. Oleynik. There are 22 references: 16 Soviet and 6 English.

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AVAILABLE: Library of Congress (QC787.C8D8)

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Dmitriyevskiy, V.P.

SOV/89-6-6-7/27

21(9)

AUTHORS: Vasilevskaya, D. P., Glazov, A. A., Danilov, V. I., Denisov, Yu. N., Dzhelepov, V. P., Dmitriyevskiy, V. P., Zamolodchikov, B. I., Zaplatin, N. L., Kol'ga, V. V., Kropin, A. A., [illegible], Rybalko, V. S., Savenkov, A. L., Sarkisyan, L. A.

TITLE: Putting Into Operation a Cyclotron With a Spatially Varying Tension of the Magnetic Field (Zapusk tsiklotrona s prostranstvennoy variatsiyey napryazhennosti magnitnogo polya)

PERIODICAL: Atomnaya energiya, 1959, Vol 6, Nr 6, pp 657 - 658 (USSR)

ABSTRACT: In the present "Letter to the Editor" the authors report on some measurements and theoretical considerations concerning some parameters of the new cyclotron. In the Laboratoriya yadernykh problem Ob"yedinennogo instituta yadernykh issledovaniy (Laboratory for Nuclear Problems of the Joint Institute for Nuclear Research) in the town of Dubna the new cyclic accelerator was started in January 1959; this new type shows both an azimuthally and a radially periodically varying magnetic field. The diameter of the magnet of the accelerator is 1200 mm. The lines of constant field tension have the shape of spirals of Archimedes, r = 16.2 φ, periodicity of the field structure:

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N = 6. The mean value of the field tension increases radially according to the relativistic mass increase of the accelerated ions. Since the acceleration originates from the center of the magnet the fundamental frequencies of the free oscillations change accordingly $Q_z = 0$, $Q_r = 1$ (at r=0) to $Q_z = 0.2$, $Q_r = 1.01$ (at r = 52 cm). It was shown theoretically that the radial increase of the mean magnetic field tension which is necessary for the elimination of the nonlinear resonance effect occurring in the center of the accelerator may decrease with increasing N, according to $N/2^N(N-1)!$ and with an increase of the radial spacing in the case of a fixed N as $(\lambda_1/\lambda_2)^{N-2}$. These investigation results were taken into account in selecting the six-spiral structure of the magnetic field in the center of which no nonlinear resonance occurs. All measurements of the field tensions were carried out by means of a nuclear magnetometer (error ±1.5 Oe). A resonance quarter-wave system with one D-shaped electrode was used for the ion acceleration. In the cyclotron deuterons

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were accelerated up to 12 Mev and α-particles up to 24 Mev at a minimum amplitude of the acceleration tension on the duant of 8 kv. The two methods which were used for measuring the energy in the case of a maximum orbital radius are briefly described. A picture shows the accelerating chamber of the cyclotron (Fig 2), another one an autograph of a neutron beam in the case of different radii. The investigation results prove the possibility of producing a relativistic cyclotron with a proton energy which equals that of a modern phasotron. There are 2 figures and 2 references, 1 of which is Soviet.

SUBMITTED: April 9, 1959

Card 3/3

DMITRIYEVSKIY, V.P.; ZAMOLODCHIKOV, B.I.; KOL'GA, V.V.

[Cyclotron with a periodic magnetic field for multiply charged ions] TSiklotron s periodicheskim magnitnym polem dlia mnogozariadnykh ionov. Moskva, Glav. upr. po ispol'zovaniiu atomnoi energii, 1960. 14 p. (MIRA 17:2)

S/056/61/000/007/006/086
A001/A101

21.3300

AUTHORS: Dmitriyevskiy, V.P., Zamolodchikov, B.I., Kol'ga, V.V.

TITLE: The cyclotron with a periodical magnetic field for multicharged ions

PERIODICAL: Referativnyy zhurnal. Fizika, no. 7, 1961, 37, abstract 7B32 (V sb. "Uskoriteli", Moscow, Atomizdat, 1960, 94 - 104)

TEXT: A cyclotron is proposed with a periodical magnetic field with a purpose to produce beams of multicharged ions with a pulse of up to 2×10^6 oe.cm and intensity of several tens of microamperes. General relations are derived and necessary voltages are calculated for accelerating ions with a prescribed range of charge-to-mass ratio. The vertical focusing is effected by the variable gradient of the magnetic field whose maxima are located on spiral lines. An appendix contains the sketchy calculation of an installation with the following characteristics: field in the accelerator center, 16,000 oersted; the final radius of ion motion, 130 cm; the range of charge-to-mass ratios, 1/3 to 1/7.

B

A. Talyzin

[Abstracter's note: Complete translation]

Card 1/1

DmiTRiyevskiy, V.P.

21.2100

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SOV/89-8-3-2/32

AUTHORS: Vasilevskaya, D. P., Glazov, A. A., Danilov, V. I., Denisov, Yu. N., Dzhelepov, V. P., Dmitriyevskiy, V. P., Zamolodchikov, B. I., Zaplatin, N. L., Kolga, V. V., Kropin, A. A., Lyu Ke-chuan', Nybalko, V. S., Savenkov, A. L., Sarkisyan, L. A.

TITLE: A Cyclotron With a Spacially Varying Magnetic Field Intensity

PERIODICAL: Atomnaya energiya, 1960, Vol 8, Nr 3, pp 189-200 (USSR)

ABSTRACT: The paper outlines the theory of charged particle motion in a magnetic field with periodic structure along its azimuth and radius, and describes investigations performed during the years 1955-58 on a cyclotron accelerator with spiral-ridged magnetic fields at Joint Institute for Nuclear Research (Ob'yedinennyy institut yadernyh issledovaniy). The machine was built following the space stability theory developed at Dubno and Harwell. The authors first discuss the linear theory and investigate the particle oscillations with respect to a closed

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21.2100

AUTHORS: Dmitriyevskiy, V. P., Zamolodchikov, B. I., Kol'ga, V. V.

TITLE: Beam Loss at the Limiting Radius in a Proton Synchrotron

PERIODICAL: Atomnaya energiya, 1960, Vol. 9, No. 4, pp. 303 - 305

TEXT: In the present "Letter to the Editor", the authors discuss the resonance interaction between the radial and vertical oscillations near $n = 0.25$. This resonance is much more harmful than the parametric excitation of vertical oscillations caused by the first harmonic in the structure of the magnetic field. The limiting energy to which particles in a high-energy proton synchrotron may be accelerated corresponds to a radius for which the coefficient $n = -(r/H)(dH/dr)$, characterizing the decrease of the magnetic field, is in the range $0.25 > n > 0.2$. Coupled oscillations do not lead to a total beam loss in the range $n=0.2$. This range is followed immediately by the range of parametric excitation of vertical oscillations of frequency $Q_z=0.5$ ($n=0.25$). This parametric excitation cannot cause any significant increase of the amplitude in a real

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proton synchrotron. The effects which cause an increase of the amplitude of vertical oscillations in the presence of an azimuthal inhomogeneity of the magnetic field are now investigated. Coupled oscillations originating from a distortion of the closed orbits caused by an azimuthal inhomogeneity of the field structure are considered. Formulas are derived, which give the increase in the amplitude in the resonance zone for quasistatic (6) and dynamic (7) cases. The theoretical results were verified by means of an electronic simulator of the type ЭМУ-8 (EMU-8). This instrument integrated equation (2) describing the vertical oscillations. For this purpose, the equations were put in the form of a system of two equations (9), and the initial phase φ_0 was so chosen that the maximum increase of the amplitude of the vertical oscillations occurred during the passage through the resonance at $n_0 = 0.25$. The maximum amplitude of the oscillation could be observed on the indicator screen, and was determined from the voltage at the output of the integrator. The accuracy of the solution was 1%. The system of equations (9) was solved for two special cases: the proton synchrotron of Ob"yedinennyy institut yadernykh issledovaniy (Joint Institute of Nuclear Research) in Dubna, and that of

Beam Loss at the Limiting Radius in a Proton Synchrotron

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B006/B070

the Institute of Nuclear Research in Tokyo. Figs. 1 and 2 show the dependence of the maximum amplitude on the magnitude of the first harmonic of the magnetic field for kinetic ion energies of 680 Mev (Dubna) and 57 Mev (Tokyo). The calculated curves were obtained from equations (6) and (7). Figs. 3 and 4 show photographs of the oscillograms which show the build-up of vertical oscillations on the dynamical passage through the resonance considered (E_k=57 Mev). The authors thank V. P. Dzhelepov for discussions. There are 4 figures and 3 references: 1 Soviet and 2 US.

SUBMITTED: March 28, 1960

Card 3/3

VASIL'YEVSKAYA, D.P.; GLAZOV, A.A.; DENISOV, Yu.N.; DZHELEPOV, V.P.; DMITRIYEVSKIY, V.P.; ZAMOLODCHIKOV, B.I.; ZAPLATIN, N.L.; KOL'GA, V.V.; KROPIN, A.A.; KUZMYAK, M.; ONISHCHENKO, L.N.; RYBALKO, V.S.; SARKISYAN, L.A.; SHVABE, Ye.; SARANTSEVA, V.R., tekhn. red.

[Theory and the modeling of a circular synchro-cyclotron with a spiral magnetic field] Voprosy teorii i modelirovaniia kol'tsevogo fazotrona so spiral'noi strukturnoi magnitnogo polia. Dubna, Ob"edinennyi in-t iadernykh issl., 1962. 7 p.
(MIRA 15:4)

(Synchrotron)

L 5893-65 EWT(m)/EPA(w)-2/EWA(m)-2 Pt-7 IJP(c) GS

ACCESSION NR: AT5007938 S/0000/64/000/000/0547/0555

AUTHOR: Glazov, A. A.; Denisov, Yu. N.; Dmitriyevskiy, V. P.; Zamolodchikov, B.I.; Zaplatin, N.L.; Kol'ga, V. V.; Komochkov, M. M.; Kropin, A. A.; Dzhelepov, V. P.; Gashev, M. A.; Malyshev, I. F.; Monoszon, N. A.; Popkovich, A. V.

10

38 Pt-1

TITLE: Relativistic 700-Mev proton cyclotron 19

SOURCE: International Conference on High Energy Accelerators. Dubna, 1963. Trudy. Moscow, Atomizdat, 1964, 547-555

TOPIC TAGS: proton accelerator, relativistic particle

ABSTRACT: Current theoretical concepts and experimental data conclusively show that to understand the microcosm further it is necessary to increase the beam intensity of accelerators by a factor of 10^3 and produce accelerators with energies up to thousands of Bev's. For the past 5-6 years constant gradient accelerators (500-900 Mev cyclotrons) have appeared to be the best way to produce particles with energies up to 1 Bev (1 Gev) with beam currents of the order of 1 milliampere instead of 1 microampere (as found in synchrocyclotrons). The present report describes the design for a 700-Mev proton cyclotron developed by the Laboratory of Nuclear Prob-

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L 58913-65

ACCESSION NR: AT5007938

blems of the OIYaI jointly with the NIIEFA GKAE SSSR and other scientific research institutes with rated current proton beam up to 500 microamperes. The choice of energy was made on the basis of the fact that at 700 Mev the cross-sections for formation of pions in nucleon-nucleon and nucleon-nuclei collisions are close to maximum, and also because of the possibility of utilizing the electromagnet of the 680-Mev synchrocyclotron of the OIYaI for the new accelerator. The following new problems were considered in the design because there is now no similar operational high-energy accelerator: (a) verification of the linear theory and development of the nonlinear theory of spatial stability and of the phase motion of particles in the accelerator; (b) creation in a large space of a magnetic field with complex configuration and its stabilization with an unusually high degree of accuracy; (c) production of apparatus for the measurement of strongly nonhomogeneous magnetic fields (gradients up to 4000 oe/cm) with an accuracy better than [illegible] tion of high-frequency oscillators with power up to 2 MW at a frequency [illegible] cycles per second (12 Mc), with frequency stability of the order of [illegible], which operate with a resonance system with amplitude of the accelerating high frequency voltage of up to 100 kilovolts; (e) design of an accelerator and its auxiliary systems which ensure effective operation and maintenance under conditions of high levels of activity; (f) development of a highly effective system for the channeling of proton beams from the accelerator, and also solution of the problems connected with

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L 58913-65

ACCESSION NR: AT5007938

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producing beams of secondary particles and their channeling and focusing; (g) development of plans for the protection of personnel and instruments from radiation. The paper concludes that the relativistic cyclotron offers wide new possibilities for nuclear research in radiobiology, solid state physics, etc. Orig. art. has: 2 figures, 3 tables.

ASSOCIATION: (I) Ob"yedinennyy institut yadernykh issledovanniy, Dubna (Joint Institute of Nuclear Research, Dubna); (II) Nauchno-issledovatel'skiy institut [illegible] apparatury imeni D. V. Yefremova GKAE SSSR (Scientific Research Institute of [illegible] Equipment, GKAE SSSR)

SUBMITTED: 26May64 ENCL: 00

NO REF SOV 009 OTHER: 002

Card 3/3

L 4224-66 EWT(m)/EPA(w)-2/EWA(m)-2 IJP(c) GS
ACCESSION NR: AT5007952 S/0000/64/000/000/0833/0839

AUTHOR: Dmitriyevskiy, V. P.; Kol'ga, V. V.; Polumordvinova, N. I.

TITLE: Nonlinear effects and internal resonances in the relativistic cyclotron

SOURCE: International Conference on High Energy Accelerators. Dubna, 1963. Trudy. Moscow, Atomizdat, 1964, 833-839

TOPIC TAGS: relativistic particle, cyclotron, electron oscillation, resonance

ABSTRACT: In the relativistic cyclotron with spatial variation of the magnetic field, a very important role is played by nonlinear effects. In the majority of cases it is the nonlinear effects that determine the choice of the size of the parameters which characterize the structure of the magnetic field. The present report expounds the results of a theoretical discusstion of the influence exerted by the nonlinear effects upon the motion of particles in the relativistic cyclotron. This work was completed in connection with the development of the relativistic 700-Mev proton cyclotron (Glazov, A. A.; Denisov, Yu. N.; Dzhelepov, V. P.; Dmitriyevskiy, V. P.; Zamolodchikov, B. I.; et al., present collection, p. 547). The system of equations which describe the motion of charged particles in a given magnetic field for constant or adiabatically-varying momentum was derived, in the cylindrical sys-

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tem of coordinates, and studied by D. P. Vasilevskaya, et al., (*Atomnaya energiya* 8, 189 (1960)). The present authors consider simplifying assumptions and discuss the solution of the system. They discuss the nonlinear effects that act in a narrow interval of frequencies of free oscillations, causing the resonance magnification of the amplitude of corresponding oscillations. Choice of a definite regime of motion of the describing points over the stability region can ensure, by exclusion of a small region of small radii, the constancy of the frequency of the axial oscillations during the acceleration process. Therefore the authors begin their discussion with the resonances for radial oscillations, on the basis of certain nonlinear terms in the main equations. Use was made of asymptotic methods (N. N. Bogolyubov and Yu. A. Mitropol'skiy, Asymptotic methods in the theory of nonlinear oscillations, Moscow, Fizmatgiz, 1956). The phase-plane topological description of the resonance was obtained by numerical integration on the electronic computer at the Joint Institute of Nuclear Research (JINR). For certain conditions (e. g. amplitude less than 6 cm), according to the results of the computations, no noteworthy increase in the amplitude of axial oscillations is observed during passage through the resonance zone. The results agree with the values of the separatices on the phase diagram as obtained from the corresponding simplified equations. Orig. art. has: 4 figures.

APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000410530006-2"

L 4224-66

ACCESSION NR: AT5007952

ASSOCIATION: Ob"yedinennyy institut yadernykh issledovaniy, Dubna (Joint Institute of Nuclear Research)

SUBMITTED: 26May64 ENCL: 00 SUB CODE: NP

NO REF SOV: 003 OTHER: 001

Card 3/3 DP

L 2274-66 EWT(m)/EPA(w)-2/EWA(m)-2 IJP(c) GS
ACCESSION NR: AT5007943 UR/0000/64/000/000/0611/0615

AUTHOR: Glazov, A. A.; Dzhelepov, V. P.; Dmitriyevskiy, V. P.; Zamolodchikov, B. I.; Kol'ga, V. V.; Kropin, A. A.; Onishchenko, L. M.; Shvabe, Yu. I.

TITLE: Effect of space charge on the free oscillation frequency of particles in an isochronous cyclotron

SOURCE: International Conference on High Energy Accelerators. Dubna, 1963. Trudy. Moscow, Atomizdat, 1964, 611-615

TOPIC TAGS: high energy accelerator, space charge, cyclotron

ABSTRACT: Theoretical studies of the effect of space charge on the motion of particles in accelerators have been carried out in a number of works: Berestetskiy, V. V.; Gol'din, L. L.; Koshkarev, D. T. *Pribory i tekhnika eksperimenta*, 3, 26 (1956); Dmitriyevskiy, V. P.; Zamolodchikov, B. I.; Kol'ga, V. V. *Doklad no konferentsii po tsiklotronam* (Report on the Cyclotron Conference), Gracow, 1960; Kolomenskiy, A. A.; Lebedev, A. N. *Atomnaya energiya*, 7, 549 (1959). To create strong-current accelerators it is important to verify the theoretical conclusions with actual operating installations. The present work is concerned with the dependence of the frequency of axial oscillations upon the density of the space charge of the ac-

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ACCESSION NR: AT5007943

celerated particles. Pertinent measurements were carried out on a cyclotron with spiral magnetic field for the specific case of molecular hydrogen ions accelerated up to the energy of 12 Mev (Vasilevskaya, D. P., et. al., *Atomnaya energiya*, 8, 189 (1960)). The results of the present work shows that the effect of the space charge does not prevent beam intensities of the order of several milliamperes in relativistic cyclotrons. A result of this space charge is the displacement of the zones of resonant interaction of the oscillations. Expressions are obtained which describe the effect of the space charge on the basis of linear equations for the free oscillations, taking account of the electromagnetic field of the accelerated particles. It is assumed that the particles in a condensed bunch are uniformly distributed along the azimuth and that the vertical size of the bunch is much smaller than the azimuthal extension. The main topics discussed are: (1) the density of the charged particles in a relativistic cyclotron and its influence upon the frequency of the axial oscillations; (2) measurement of the azimuthal extension of the bunch; (3) measurement of the frequency of the axial free oscillations; and (4) the limiting intensity of the internal beam in a relativistic cyclotron. Orig. art. has: 6 figures, 8 formulas.

ASSOCIATION: Ob"yedinennyy institut yadernykh issledovaniy, Dubna (Joint Institute of Nuclear Research)

SUBMITTED: 26May64 ENCL: 00 SUB CODE: NP

NO REF SOV: 004 OTHER: 002

Card 2/2

KATYSHEV, Yu.V.; NOVIKOV, D.L.; POLFEROV, E.A.; DMITRIYEVSKIY, V.P., prof., doktor fiz.-mat. nauk, red.; KRASNOBRODSKAYA, L.L., red.; BOGATOVA, V.N., red.-leksikograf

[English-Russian dictionary on charged particle accelerators] Anglo-russkii slovar' po uskoritelyam zariazhennykh chastits. Moskva, Sovetskaia entsiklopediia, 1965. 323 p. (MIRA 18:10)

L 51470-65 EPA(w)-2/EWT(m)/EWA(m)-2 Pt-7/Pab-10 IJP(c)

ACCESSION NR: AP5011292 UR0053/65/085/004/0651/0678

AUTHOR: Dzhelepov, V. P.; Dmitriyevskiy, V. P.; Zamolodchikov, B. [.; Kol'ga, V.V. 19

TITLE: Strong current high energy particle accelerators—"meson factories" 36 B

SOURCE: Uspekhi fizicheskikh nauk, v. 85, no. 4, 1965, 651-678

TOPIC TAGS: particle accelerator, cyclotron, high current accelerator, particle extraction, accelerator shielding

ABSTRACT: The article deals with high-energy particle accelerators in which the particles are accelerated to approximately 1 GeV and which produce sufficiently large current, up to 1 mA (meson factories). Such accelerators are capable of producing nucleon, pion, and muon currents which are hundreds and thousands of times larger than existing equipment can supply. The article discusses the prospects afforded by such accelerators, the physical principles of accelerating particles in relativistic cyclotrons, stability theory, linear resonance effects, phase motion, nonlinear resonance effects, methods of beam extraction, [illegible] tivistic cyclotrons, and presently designed high-current accelerators [illegible] and in the USSR. The question of radiation shielding and the protection [illegible]

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L 51470-65

ACCESSION NR: AP5011292

cle beams with such accelerators, as well as the use of a linear proton accelerator as a high-current source, are also discussed. Orig. art. has: 13 figures, 27 formulas, and 4 tables.

ASSOCIATION: None

SUBMITTED:	00	ENCL:	00	SUB CODE:	NP
NR REF SOV:	017	OTHER:	009		

Card 2/2 pmd

DMITRIEVSKIY, V. S.

Interrelations of alkalies in the granites of Kazakhstan. V. S. Dmitrievskii and G. E. Bogoyavlenskaya. *Zapiski Vsesoyuz. Mineral. Obshchestva* (Mém. soc. russe minéral.) 80, 283-8(1951).—Paleozoic and Variscian granitoids (the latter in by far larger masses) are distinguished by the melanocratic character of the first, the more leucocratic type of the latter. Plagioclase prevails over K feldspar in the Paleozoic group. In the Variscian magmatic cycle, the intrusions of the Carboniferous are higher in CaO, MgO, but lower in Al_2O_3 and SiO_2 than the Permian rock types. The assumption that K_2O predominates over Na_2O in the Permian intrusions, however, is not confirmed by a crit.-statistical discussion of 292 chem. analyses. D. and B. establish that in 80% of the magmatic centers of Kazakhstan, Na_2O predominates over K_2O, independent of the geol. character of the intrusion body sizes. Only in the dikes, $Na_2O:K_2O$ is equal to or below 3:1. K_2O greater than N_2O is only observed in a few small intrusive bodies. In the Variscian granitoids the Na_2O content is increased from coarse-granular types to fine-granular and porphyric granite structures. Analyses of rocks with K_2O above Na_2O more frequently occur in granite porphyries. The following classification is given for the Kazakhstan granitoids: (*a*) Na-granites ($Na_2O:K_2O > 4:1$), including aegirite granites, 10 to 15%; (*b*) prevailingly sodic granites ($Na_2O:K_2O$ 2 to 3:1), 30 to 40%; (*c*) K-Na granites (with $Na_2O:K_2O$ of about 1.5:1, or lower), 60%; (*d*) Na-K granites, rather scarce (with $Na_2O:K_2O$ 1:1.5, or lower); (*e*) K-granites, only combined with a typical K-metasomatism, e.g. in Eastern Kounrad, Kun, Kzyltau. W. Eitel

DMITRIYEVSKIY, V. S.

A. B. Vistelius' critique of the "Introduction to petrological chemistry" by A. N. Zavaritskiy, Izv. AN SSSR. Ser. geol., no 1, 1952.

DMITRIYEVSKIY, V. S.

USSR/Geophysics - Granite May/Jun 52

"Problem of the Formation of Some Young Granites in Central Kazakhstan," V.S. Dmitriyevskiy

"Iz Ak Nauk, Ser Geolog" No 3, pp 47-70

On the basis of studies of some intrusions of young granitoids of Central Kazakhstan, the author concludes that a number of structural diversities of granites have their origin in the action of gaseous solns, which are connected with the same intrusions, on primary granites. Acknowledges helpful advice of academicians D.S. Belyankin and A.N. Zavaritskiy.

220T60

DMITRIYEVSKIY, V. S.

Classification and geological characteristics of greisen in Central Kazakhstan, Dokl. AN SSSR, 84, No 4, 1952.

DMITRIYEVSKIY, V.S.

Greisen topaz as source of high-alumina raw materials. Ogneupory 18 no.7:318 Jl '53. (MLRA 11:10)
(Topaz) (Alumina)

15-57-4-4480

Translation from: Referativnyy zhurnal, Geologiya, 1957, Nr 4, p 67 (USSR)

AUTHOR: Dmitriyevskiy, V. S.

TITLE: The Normative Chemical-Mineralogical Types of Mica-Quartz and Topaz-Quartz Greisen (O normativnykh khimiko-mineralogicheskikh tipakh slyudyano-kvartsevykh i topazo-Kvartsevykh greyzenov)

PERIODICAL: Mineralog. sb. L'vovsk. geol. o-vo pri un-te, 1956, Nr 10, pp 88-93

ABSTRACT: To distinguish the principal normative (standard) types of greisen, the author selected varieties that should have unchanged chemical and mineral compositions. He proposes to use as principal (standard) types varieties which have formed from granite or some other rock and have fully preserved one of the chemical components of the granite: K_2O or Al_2O_3. The following principal types were established among the greisen: 1) aluminian greisen, 2) aluminian-alkalic greisen, and 3) greisen

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Voronezh State U.

The Normative Chemical-Mineralogical Types (Cont.) 15-57-4-4480

devoid of alumina and alkali. The introduction of the concept of normative chemical-mineralogical types of greisen makes it possible to dispense with mass chemical analyses of greisen rocks, replacing their quantitative mineralogical calculation by a subsequent computation. A graph is furnished for comparing the compositions of greisen among themselves and with normative types.

Card 2/2

S. P. B.

DMITRIYEVSKIY, V. S.

Principal stages of the mineral formation in the greisen process. V. S. Dmitriyevskii (State Univ., Voronezh). *Doklady Akad. Nauk S.S.S.R.* 111, 670-3(1956).—The characteristic ore mineralization of the deposits in Central Kazakhstan shows distinct stages which are distinguished as a Na metasomatism (I), the subsequent greisen formation proper (II), the rare-metal mineralization (III), the sulfide ore mineralization (IV), a K feldspar metasomatism (V), and the formation of the low-temp. fluorite-quartz veins (VI). Characteristic paragenetic mineral assocns. are the following: In I a thorough albitization occurs, with crystn. of an albitic plagioclase (Ab_{98} to Ab_{91}), replacing the plagioclases of the primary granitic magmatism assocd with zoisite, calcite, wollastonite, ilmenorutile, pyrite, chalcopyrite, chalcopyrite, rutile, fluorite, molybdenite, and wolframite. In II the feldspars are replaced by mica, topaz, fluorite, and quartz; accessories are beryl, helvite, bertrandite, tourmaline, fluorite, xenotime, and monazite. A gang quartz is characteristic for III, with wolframite, cassiterite, magnetite, hematite, rutile, ilmenorutile, accessorial beryl, and molybdenite (this latter mineral crysd. last, on the borders of the veins). For IV are typical the sulfides of Fe, Cu, Zn, Pb, Bi, and Mo (bornite, tetrahedrite, chalcopyrite, marcasite, and molybdenite) assocd. with quartz (2nd generation). Wolframite is often replaced by arsenopyrite, pyrite, chalcopyrite, or molybdenite. Stage V is characterized by a more local crystn. of K feldspar, some topaz, fluorite, ilmenorutile, hematite, zircon, rarely molybdenite, and wolframite. For VI the quartz-fluorite paragenesis is typical. The telescoping of the subsequent stages does not exclude some local anomalies, e.g. the simultaneous omission of stages III and IV. Many of the minerals cited above may appear in different generations, but evidently do not indicate any equil. phenomena. W. Eitel

SOV/65-58-11-12/15

AUTHOR: Dmitriyevskiy, V. S.

TITLE: The Determination of Tetraethyl Lead in Ethylated Petrols (Opredeleniye tetraetilsvintsa v etilirovannykh benzinakh)

PERIODICAL: Khimiya i Tekhnologiya Topliv i Masel, Nr 11, 1958, pp 59 - 61 (USSR)

ABSTRACT: A very accurate and simple method for determining tetraethyl lead (TES) is very important during long-term storage of ethylated petrols as a concentration of the TES can exceed the admissible limits due to evaporation of petrol. Some deficiencies in the standard method for determining TES in aviation petrols (GOST 5337-55) are pointed out, as well as difficulties arising during the analysis of petrols B 95/130. Methods for determining many di- and trivalent metal cations, especially Fe^{+++}, with the aid of complexones, have recently been described (Ref.2). For the determination of lead, the complexone "Trilon B" was used and special chromogen black ET-00 (eric chrome black G) as indicator. When titrating the lead ions with "Trilon B" in the presence of this indicator, the wine-red colour changes at the equivalent point to cornflower blue. This clear change

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The Determination of Tetraethyl Lead in Ethylated Petrols

of colour is mostly observed in an alkaline medium at a pH of about 10. Bi^{+} ions are separated, and it is necessary to add a corresponding amount of a buffer solution (350 ml of a 25% ammonia solution). The TES content can be calculated according to the formula:

$$X = VN \frac{323.45}{1000d}$$

where X equals the TES content in grams for 1 kg of petrol; N equals the normality of "Trilon B", 323.45 is the TES equivalent, d equals the density of the petrol and V equals the amount of ml of "Trilon B" used during the titration. A method for determining the normality of "Trilon B" is described. This process was evaluated on various types of aviation petrols containing differing amounts of TES. Gravimetric tests were used as controls (Ref.4). Tabulated values indicate that results obtained by this method and the gravimetric method only differ by 0.4%. It can also be used for determining the TES content in gasolines.

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SOV/65-58-11-12/15

The Determination of Tetraethyl Lead in Ethylated Petrols

Satisfactory results were obtained during tests on gasoline A-66 and gravimetric tests were carried out as controls. There is 1 Table and there are 4 Soviet References.

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SOV/112-60-1-1158

Translation from: Referativnyy zhurnal Elektrotekhnika, 1960, Nr 1, p 15 (USSR)

AUTHORS: Vorob'yev, A.A., Dmitriyevskiy, V.S.

TITLE: Methods and Devices for Equalizing the Voltage Distribution Over the Surface of a Solid Dielectric on Pulses

PERIODICAL: Izv. Tomskogo politekhn. in-ta, 1958, Nr 95, pp 45 - 49

ABSTRACT: General conditions applied to devices equalizing the voltage distribution over the surface of a dielectric and the methods of equalizing are discussed. Semiconducting coatings of dielectric surface, rings and screens of electrodes of long insulator chains do not secure a uniform voltage distribution over the surface on pulses. The VEE method of equalization is applicable at a positive pulse polarity. Considering the above methods inadequate for the cases of pulse voltages, the

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SOV/112-60-1-1158

Methods and Devices for Equalizing the Voltage Distribution Over the Surface of a Solid Dielectric on Pulses

authors stress the necessity of looking for new methods of equalizing the voltage distribution over the surface.
4 references.

A.A.V.

Card 2/2

VISHNYAKOV, S.G., prof., otv. red.; GRISHCHENKO, M.N., prof., red.; DMITRIYEVSKIY, V.S., dots., red.; LARIONOV, A.K., prof., red.; PLAKSENKO, N.A., dots., red.; TOCHILIN, M.S., prof., red.; PREOBRAZHENSKAYA, V.N., dots., red.; KHOZHAINOV, N.P., dots., red.

[Geology and minerals of central Chernozem provinces; transactions] Geologiia i poleznye iskopaemye TSentral'no-Chernozemnykh oblastei; trudy. Voronezh, Izd-vo Voronezhskogo univ., 1964. 334 p. (MIRA 18:2)

1. Mezhoblastnoye geologicheskoye soveshchaniye po geologii i mineral'nym resursam tsentral'nochernozemnykh oblastey, Voronezh, 1962. 2. Voronezhskiy lesotekhnicheskiy institut (for Grishchenko). 3. Voronezhskiy gosudarstvennyy universitet (for Preobrazhenskaya).

BASHKIN, N.Ya.; DMITRIYEVSKIY, V.S.; GOLUBEVA, A.A.; NECHAYEVA, Ye.M.

Smelting fluxed iron ore open-hearth briquets at the Komintern Plant. Metallurg 9 no.12:19-21 D '64. (MIRA 18:2)

BASHKIN, N.Ya.; DMITRIYEVSKIY, V.S.; KISLOV, V.M.; CHURAKOV, A.I.

Using fluxed briquets in smelting steel in heavy duty open-hearth furnaces. Stal' 24 no.12:1081-1083 D '64.
(MIRA 18:2)

KHOZHAINOV, N.P., dotsent; TOCHILIN, M.S., prof.; DMITRIYEVSKIY, V.S., dotsent; CHERNYSHOV, N.I., dotsent; PETRINA, Z.D., predpodavatel'; LAVRENOVA, T.V., assistent; RASKATOV, G.I., dotsent; PREOBRAZHENSKAYA, V.N., dotsent; SHRAMKOVA, G.V., [redacted], dotsent; [redacted], dotsent

Savva Gavrilovich Vishniakov, 1897-1964; obituary. Lit. i pol. iskop. no.6:179-180 N-D '64. (MIRA 18:3)

KHODYREV, P.V., uchitel'; PANASYUK, uchitel'; DMITRIYEVSKIY, [illegible]., uchitel' (poselok Prirechenskiy, Krasnodarskogo kraya); NIKITIN, I.V., uchitel'

Our readers' letters. Geog. v shkole 23 no.4:74-76 Jl-Ag '60. (MIRA 13:10)

1. Verkhne-Bystritskaya shkola Kirovskoy oblasti (for Khodyrev). 2. 53-ya shkola, stantsiya Timashevskaya, Severo-Kavkazskoy zheleznoy dorogi (for Panasyuk). 3. 5-ya Solnechnogorskaya shkola, Moskovskoy oblasti (for Nikitin).
(Physical geography--Study and teaching)

DMITRIYEVSKIY, Yu.D.

Anglo-Egyptian Sudan, a colony of British imperialism. Vest. LGU 4 no.8:75-80 Ag '49. (MIRA 12:7)
(Anglo-Egyptian Sudan)

DMITRIYEVSKIY. Yu. D.

Anglo-Egyprian Sudan; outline of economic geography, Moskva, Geografgiz, 1951.

DMITREVSKIY, Yu. D.

Standard textbook on geography for the 6th grade ("Geography of the world's parts." G. I. Ivanov, A. S. Dorbov. Reviews by Yu. D. Dmitrevskiy). Izv. Vses. geog. obshch., 84, No 3, 1952.