IVANOVA, N.S.

Catamneses of epilepsy patients after treatment with hexamidine. (MIRA 15:2)
Vop. psikh. no.4:124-131 '60.
(EPILEPSY) (BENZAMIDINE)

IVANOVA, N.S.

Tactile hallucinosis syndrome with the delirium of being infested with skin parasites. Zhur. nevr. i psikh. 64 no.10:1547-1552 '64. (MIRA 17:11)

1. Klinika pozdnikh psikhozov (zaveduyushchiy - doktor med. nauk E.Ya. Shternberg) Instituta psikhiatrii AMN SSSR, Moskva.

IVANOVA, N.S.

Forms of the course of the verbal hallucinosis syndrome in old age psychoses. Zhur. nevr. i psikh. 65 no.4:584-592 '65. (MIRA 18:5)

1. Klinika psikhozov pozdnego vozrasta (zaveduyushchiy - doktor med. nauk E.Ya. Shternberg) Instituta psikhiatrii AMN SSSR, Moskva.

MINENKO, V.I.; IVANOVA, N.S.; PAL'KO, I.K.

Electrode functions of some oxide refractories. Ukr. khim. zhur. 31 no.8:804-810 '65. (MIRA 18:9)

1. Khar'kovskiy inzhenerno-ekonomicheskiy institut.

IVANOVA, N. S.

Mar 1946

USSR/Ice
Deformation

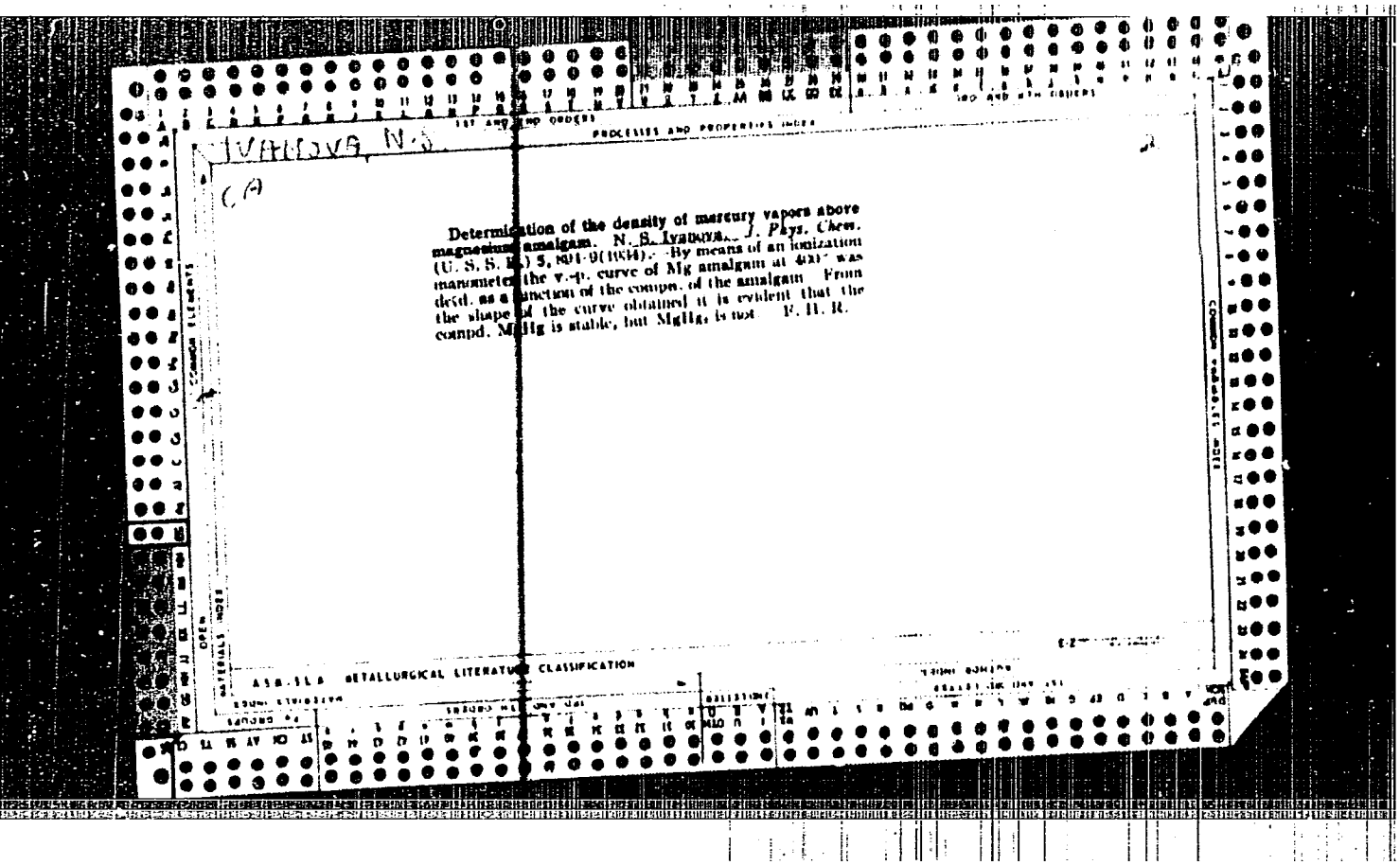
"Breakdown and Carrying Power of Ice," P. P. Kobeko, N. I. Shishkin, F. I. Marey, N. S. Ivanova, 4 pp

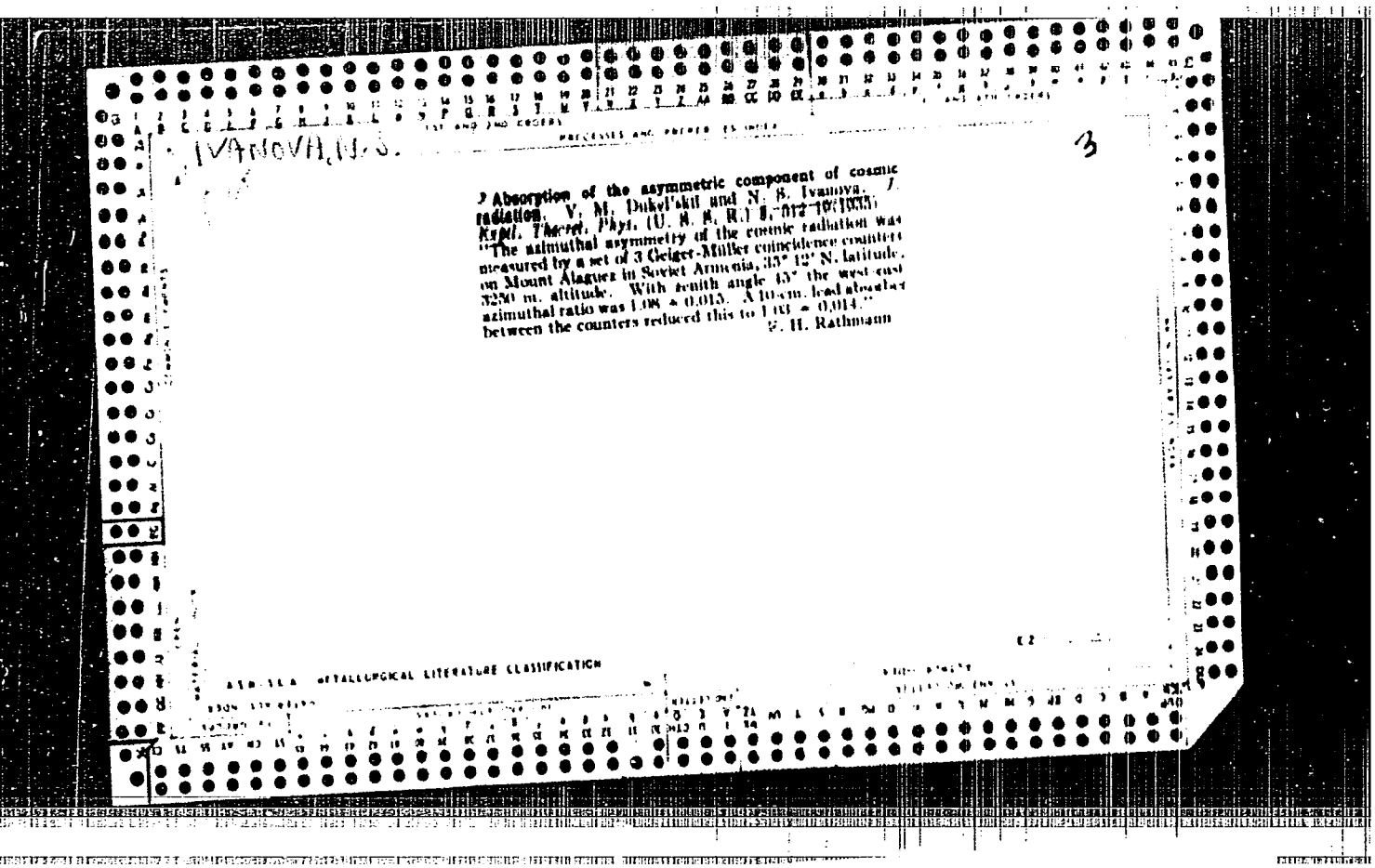
"Zhur Tekh Fiz" Vol XVI, No 3

Tables and graphs showing relations among load, ice thickness and supporting area, critical values, etc.

PA 12T95

Mor., Leningrad Physico-Technical Institute, Dept. Physico-Math. Sci., Acad. Sci.





IVANOVA, N. S.

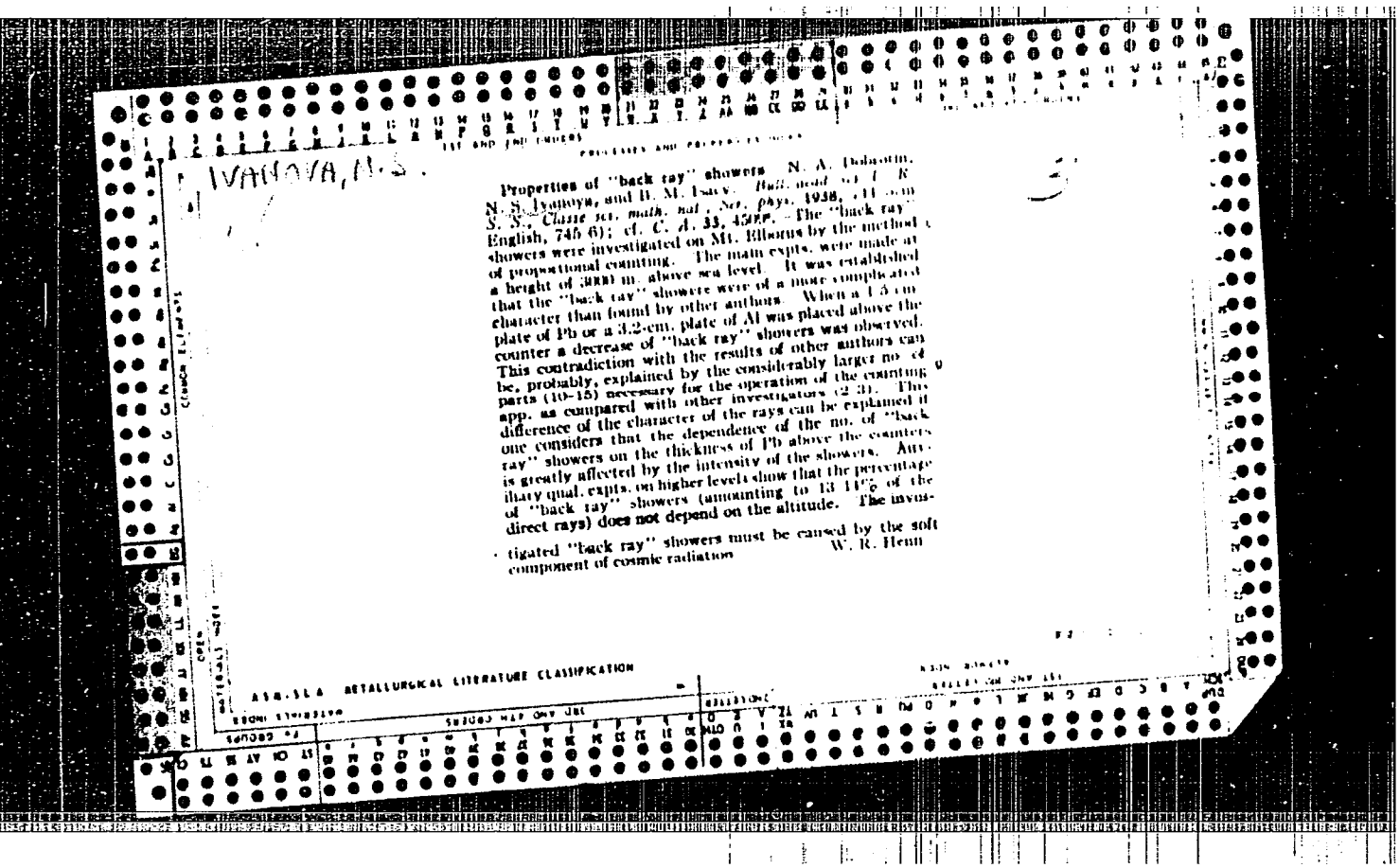
3

Absorption of the asymmetric component of cosmic radiation. V. M. Dukel'skii and N. S. Ivanova. *Zhur. Eksper. Teoret. Fiz.* (U. S. S. R.) 8, 912-19(1938).
"The azimuthal asymmetry of the cosmic radiation was measured by a set of 3 Geiger-Müller coincidence counters on Mount Alagues in Soviet Armenia, 40° 32' N. latitude, 3250 m. altitude. With zenith angle 45° the west-east azimuthal ratio was 1.08 ± 0.015. A 10-cm. lead absorber between the counters reduced this to 1.01 ± 0.014."
W. H. Rathmann

ASTIA METALLURGICAL LITERATURE CLASSIFICATION

IVANOVA, N. S.

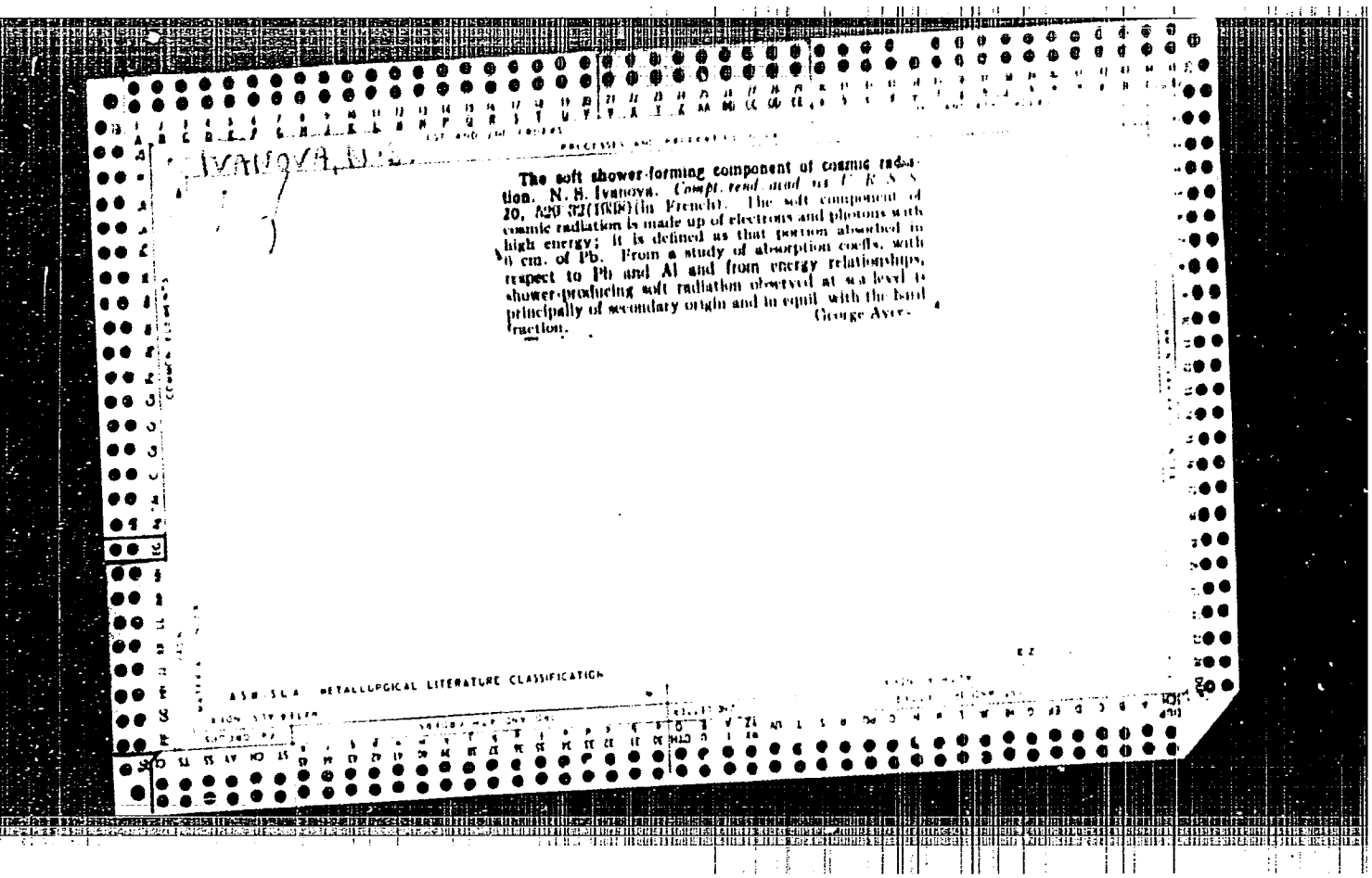
"Research with Ultra Beta and Cosmic Rays," Problemy Soveremennoy Fiziki, Moscow/Leningrad, 1936.



IVANOVA, M.S.

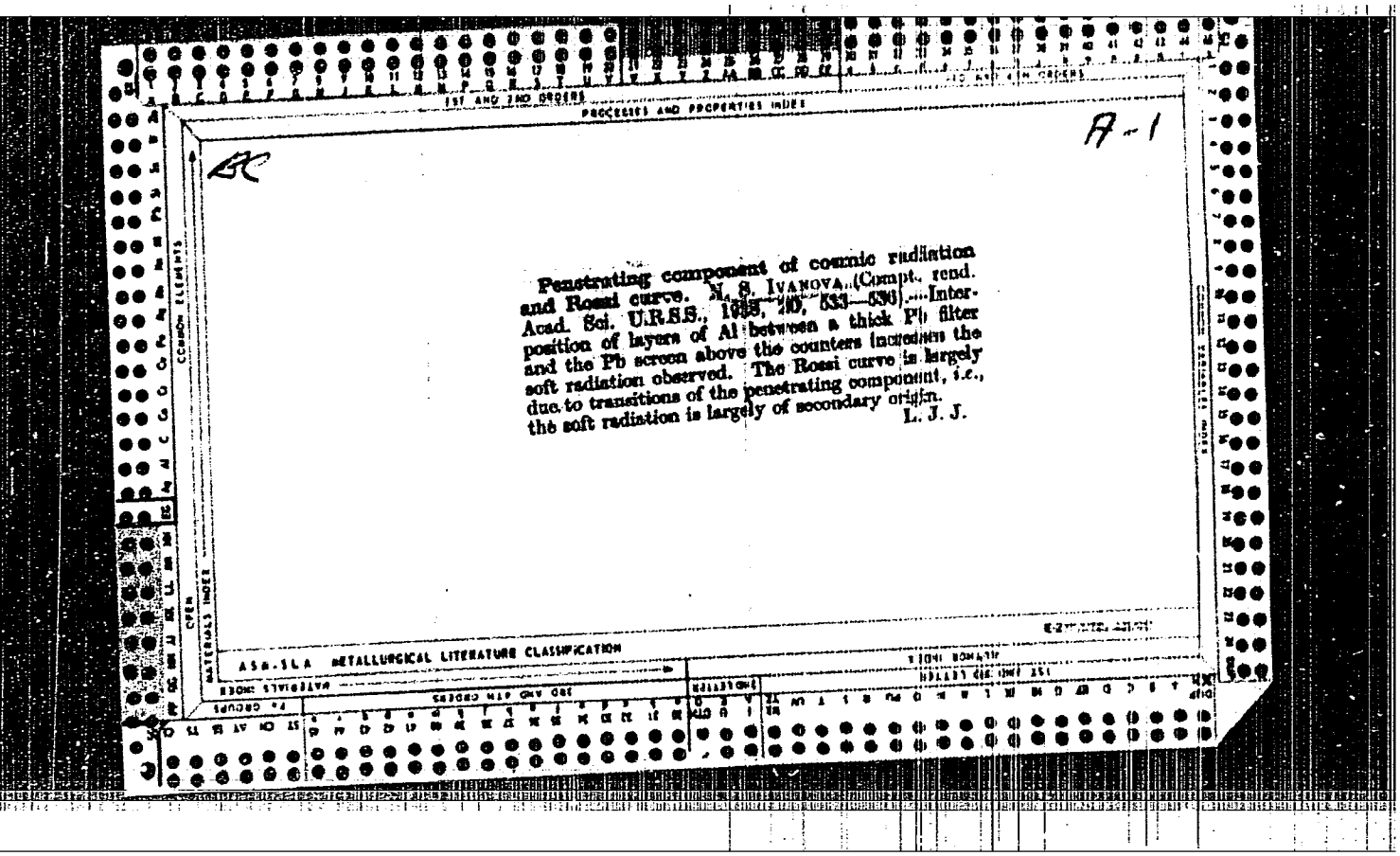
Properties of "back ray" showers. N. A. Dobrotin, N. S. Ivanova, and B. M. Isaev. *Bull. acad. sci. U.R.S.S., Classe sci. math. nat., Sér. phys.* 1938, 741–59 (in English, 745–6); cf. *C. A.* 33, 4588⁸. The "back ray" showers were investigated on Mt. Elbrous by the method of proportional counting. The main expts. were made at a height of 3860 m. above sea level. It was established that the "back ray" showers were of a more complicated character than found by other authors. When a 1.5-cm. plate of Pb or a 3.2-cm. plate of Al was placed above the counter a decrease of "back ray" showers was observed. This contradiction with the results of other authors can be, probably, explained by the considerably larger no. of parts (10–15) necessary for the operation of the counting app. as compared with other investigators (2–3). This difference of the character of the rays can be explained if one considers that the dependence of the no. of "back ray" showers on the thickness of Pb above the counters is greatly affected by the intensity of the showers. Auxiliary qual. expts. on higher levels show that the percentage of "back ray" showers (amounting to 13–14% of the direct rays) does not depend on the altitude. The investigated "back ray" showers must be caused by the soft component of cosmic radiation. W. R. Henn

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



The soft shower-forming component of cosmic radiation. N. S. Ivanova. *Compt. rend. acad. sci. U.R.S.S.* 20, 829-32(1938)(In French). The soft component of cosmic radiation is made up of electrons and photons with high energy; it is defined as that portion absorbed in 6 cm. of Pb. From a study of absorption coeffs. with respect to Pb and Al and from energy relationships, shower-producing soft radiation observed at sea level is principally of secondary origin and in equil. with the hard fraction. George Ayers

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

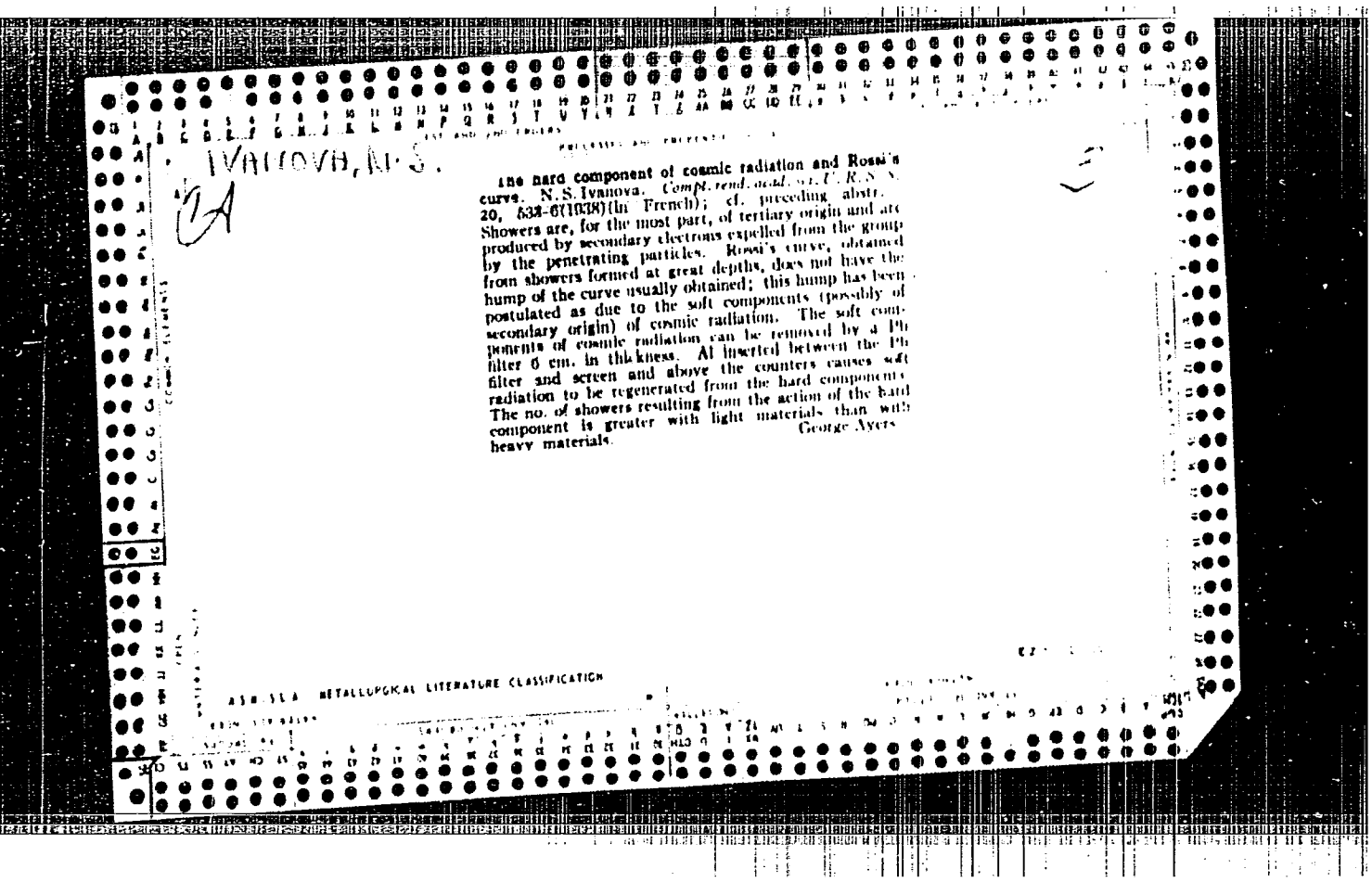


A-1

Penetrating component of cosmic radiation and Rossi curve. N. S. IVANOVA. (Compt. rend. Acad. Sci. U.R.S.S., 1935, 20, 533—536).—Interposition of layers of Al between a thick Pb filter and the Pb screen above the counters increases the soft radiation observed. The Rossi curve is largely due to transitions of the penetrating component, i.e., the soft radiation is largely of secondary origin.

L. J. J.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



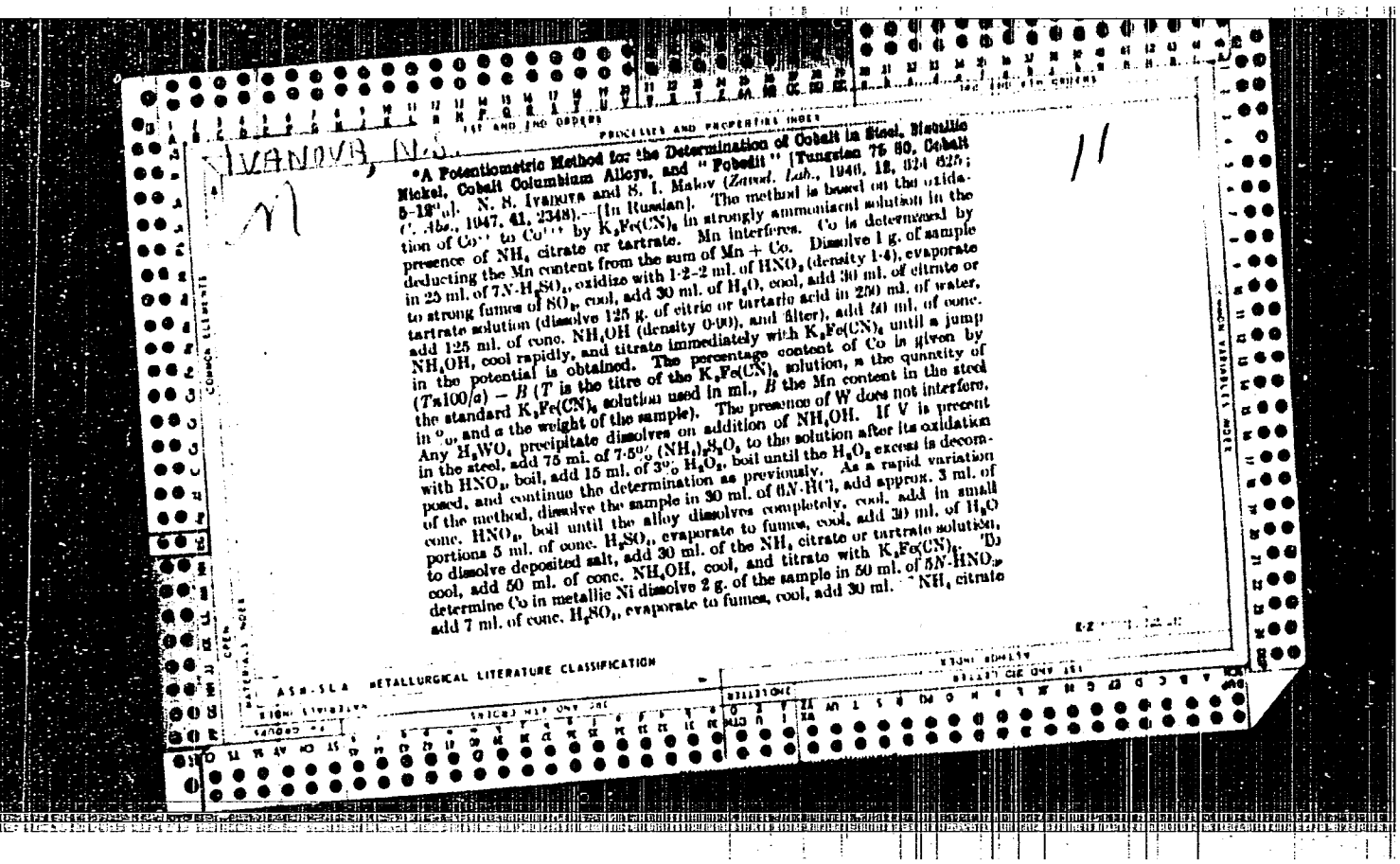
IVANOVA, N. S.

CA

The hard component of cosmic radiation and Rossi's curve. N. S. Ivanova. *Compt. rend. acad. sci. U.R.S.S.* 20, 633-6(1938)(In French); cf. preceding abstr. Showers are, for the most part, of tertiary origin and are produced by secondary electrons expelled from the group by the penetrating particles. Rossi's curve, obtained from showers formed at great depths, does not have the hump of the curve usually obtained; this hump has been postulated as due to the soft components (possibly of secondary origin) of cosmic radiation. The soft components of cosmic radiation can be removed by a Pb filter 6 cm. in thickness. Al inserted between the Pb filter and screen and above the counters causes soft radiation to be regenerated from the hard components. The no. of showers resulting from the action of the hard component is greater with light materials than with heavy materials.

George Ayers

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



IVANOVA, N.S.

11

*A Potentiometric Method for the Determination of Cobalt in Steel, Stellite Nickel, Cobalt Columbium Alloys, and "Pobedit" (Tungsten 75 80, Cobalt 5-12%). N. S. Ivanova and S. I. Malov (*Zavod. Lab.*, 1948, 18, 624-625; C. Abs., 1947, 41, 2348).—[In Russian]. The method is based on the oxidation of Co^{++} to Co^{+++} by $K_3Fe(CN)_6$ in strongly ammoniacal solution in the presence of NH_4 citrate or tartrate. Mn interferes. Co is determined by deducting the Mn content from the sum of Mn + Co. Dissolve 1 g. of sample in 25 ml. of 7*N*-H_2SO_4, oxidize with 1·2–2 ml. of HNO_3 (density 1·4), evaporate to strong fumes of SO_3, cool, add 30 ml. of H_2O, cool, add 30 ml. of citrate or tartrate solution (dissolve 125 g. of citric or tartaric acid in 200 ml. of water, add 125 ml. of conc. NH_4OH (density 0·90), and filter), add 50 ml. of conc. NH_4OH, cool rapidly, and titrate immediately with $K_3Fe(CN)_6$ until a jump in the potential is obtained. The percentage content of Co is given by $(T \times 100/a) - B$ (T is the titre of the $K_3Fe(CN)_6$ solution, a the quantity of the standard $K_3Fe(CN)_6$ solution used in ml., B the Mn content in the steel in %, and a the weight of the sample). The presence of W does not interfere. Any H_2WO_4 precipitate dissolves on addition of NH_4OH. If V is present in the steel, add 75 ml. of 7·5% $(NH_4)_2S_2O_8$ to the solution after its oxidation with HNO_3, boil, add 15 ml. of 3% H_2O_2, boil until the H_2O_2 excess is decomposed, and continue the determination as previously. As a rapid variation of the method, dissolve the sample in 30 ml. of 6*N*-HCl, add approx. 3 ml. of conc. HNO_3, boil until the alloy dissolves completely, cool, add in small portions 5 ml. of conc. H_2SO_4, evaporate to fumes, cool, add 30 ml. of H_2O to dissolve deposited salt, add 30 ml. of the NH_4 citrate or tartrate solution, cool, add 50 ml. of conc. NH_4OH, cool, and titrate with $K_3Fe(CN)_6$. To determine Co in metallic Ni dissolve 2 g. of the sample in 50 ml. of 5*N*-HNO_3, add 7 ml. of conc. H_2SO_4, evaporate to fumes, cool, add 30 ml. of NH_4 citrate

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

IVANOVA, N. S.

Slow heavily ionizing particles of the cosmic radiation at 3860 metres above sea level. N. S. Ivanova. *Compt. rend. acad. sci. U.R.S.S.* 52, 701 [1946].— Preliminary results obtained by the proportional-counter method indicate that approx. 50% of all cosmic particles which produce nuclear disintegration are ionizing and 50% are non-ionizing. The latter are most likely photons, whereas the former are neutrons. G. C. Akerlof

IVANOVA, N.S.

539.172.13

543 THE FISSION OF URANIUM NUCLEI BY PROTONS OF ENERGY 460 MeV. N.S.Ivanova, N.A.Perfilov and V.P.Shamov.

Dokl. Akad. Nauk SSSR, Vol. 103, No. 4, 573-5 (1955). In Russian.

Photographic emulsion plates loaded with uranium were irradiated by protons of energy 460 MeV. In an electron-sensitive emulsion, 46 fissions were found, of which 63% were accompanied by the emission of light charged particles (up to six in number, with an average of 1.65). In another emulsion with a proton-sensitivity limit of about 60 MeV, 102 fissions were found with an average of 1 particle emitted. Thus 40% of the particles have energies greater than 60 MeV. The angular distribution of these particles was predominantly forward. It is concluded that the majority of the particles originate in a nuclear cascade process in the uranium nucleus. Upper and lower limits to the mean excitation energy are roughly estimated to be 198 and 128 MeV respectively. The fission cross-section was found to be 1.2 ± 0.3 barn, so that about 70 ± 18% of uranium nuclei undergo fission on interacting with 460 MeV protons. The mean total path of the fission fragments is found to be the same as for fission by π^--mesons and by slow neutrons. The kinetic energy of the fragments is therefore derived only from their Coulomb repulsion. J.B.Sykes

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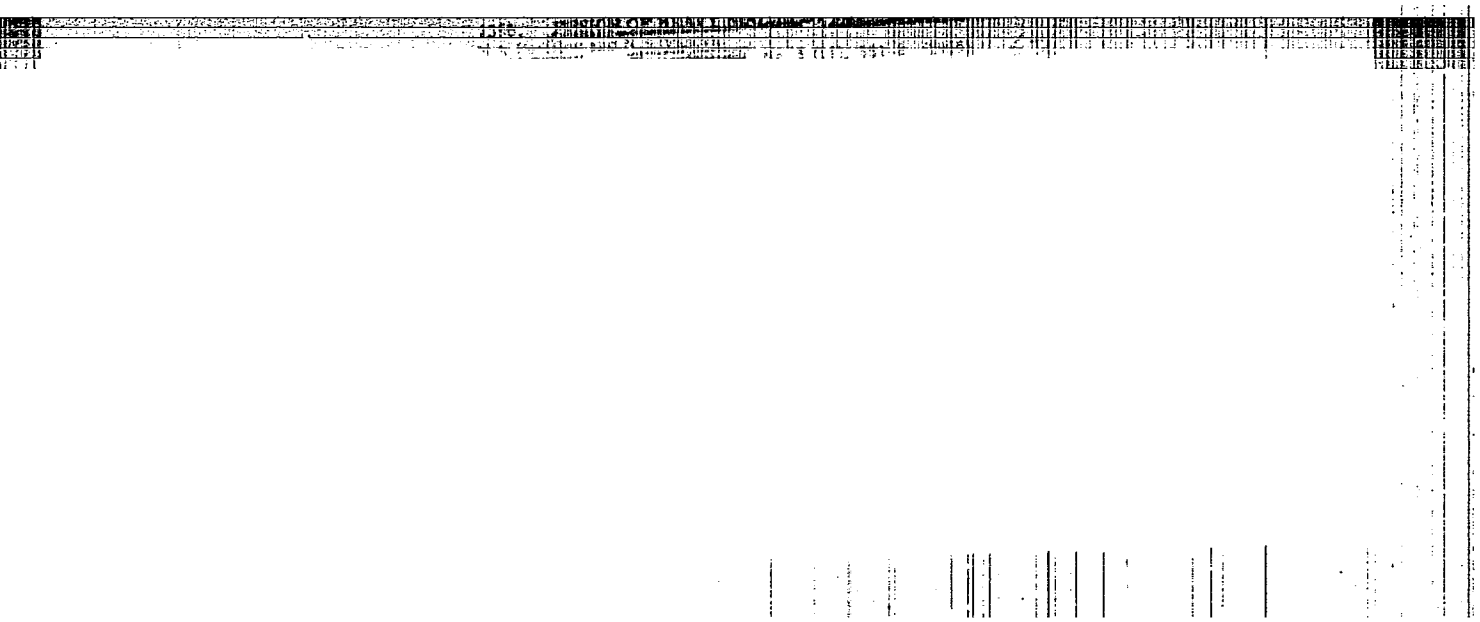

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FD-2350

USSR/Nuclear Physics - Fission by slow negative pi-mesons

Card 1/2 Pub. 146 - 15/34

Author : Perfilov, N. A., and Ivanova, N. S.

Title : Fission of heavy nuclei by slow negative pi-mesons

Periodical : Zhur. eksp. i teor. fiz. 28, 732-734, Jun 1955

Abstract : In the present note the writers briefly describe the results of works on the fission of heavy nuclei during the interaction with slow negative pi-mesons, which works were carried out in the course of 1950-1952; the results have been presented in Otchet RIAN* (March 1950, Oct 1950, Jun 1951, Jan 1952, Jun 1952), occasional co-author being D. V. Viktorov. They discuss the distribution of number of fragments according to flight path (0 to 18 microns) and according to the energies of protons emitted during fission of uranium nuclei by slow negative pi-mesons. They remark that the fission of uranium by capture of negative pi-mesons was first reported in March 1950, but almost simultaneously and independently of the writers it was also observed by I. M. Frank and G. Ye. Belovitskiy and reported in Otchet FIAN (Report of Physical Institute, Acad. Sci. USSR); they acknowledge, however, that the first communications in print on fission of U by slow negative pi-mesons appeared Oct 1951 in S. Al-Salam's article

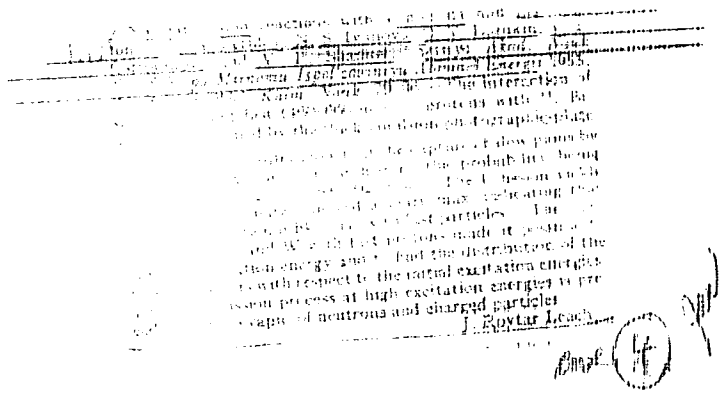
Card 2/2

FD-2350

(Phys. Rev. 84, 1951). They thank M. G. Meshcheryakov and the collective of associates of his laboratory, and Acad. P. I. Lukirskiy. Nine references: e. g. A. V. Pyrkin, Otchet RIAN, 1953.

Institution : Radium Institute, Academy of Sciences USSR [RIAN*]

Submitted : Mar 19, '55



Ident/w. Radium Inst. Acad Sci. USSR

IVANOVA, N. S., PERFILOV, N. A. and SHAMOV, V. P.

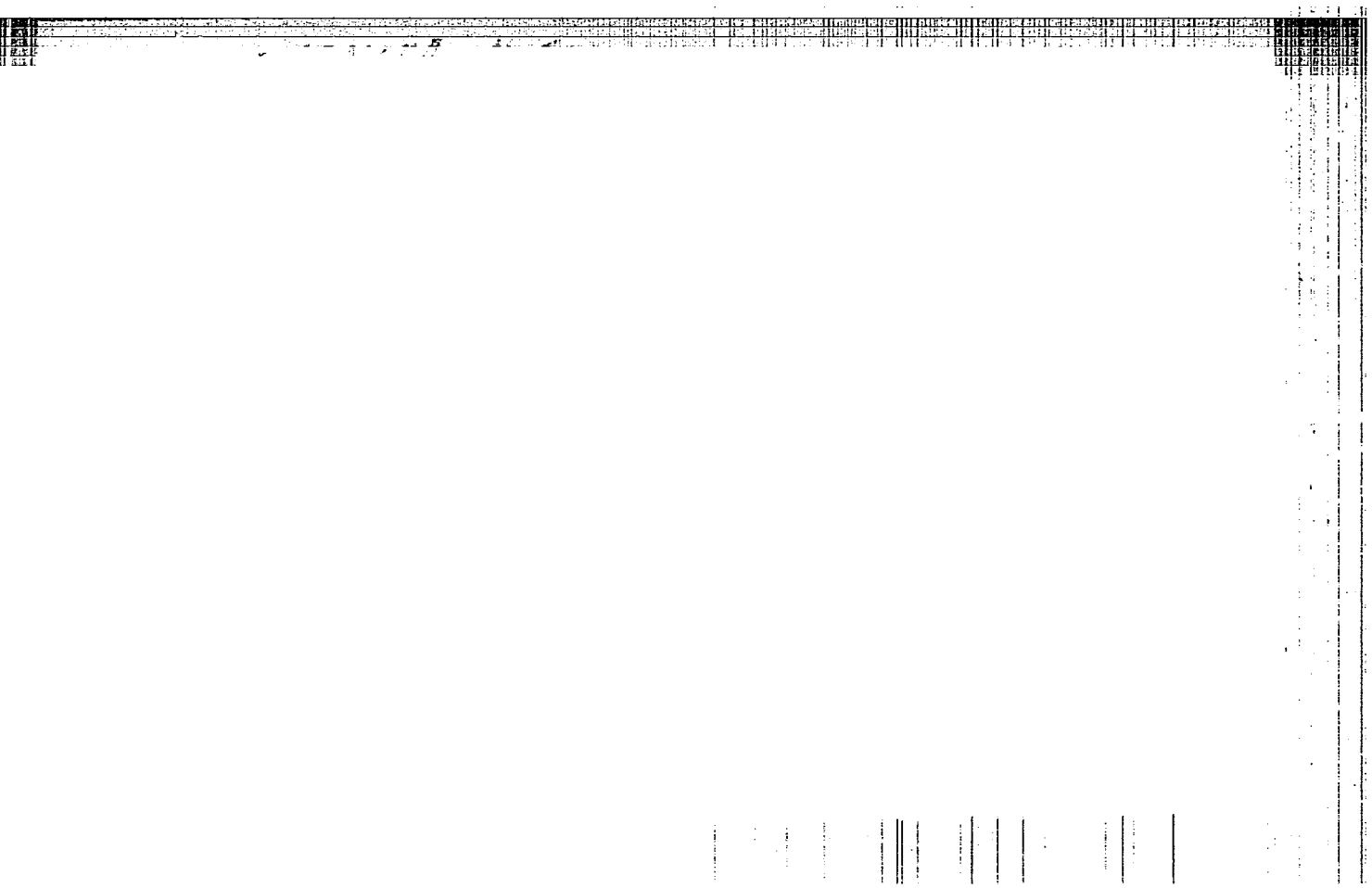
"Exposition of the Results of Investigations of Fission by the Method of Photoemulsions in Perfilov's Laboratory in the Leningrad Radium Institute", a report presented at the Conference on the Physics of Nuclear Fission, 19-21 January 1956, Atom Energ., No. 1, 1956.

APPROVED FOR RELEASE: 08/10/2001 CIA-RDP86-00513R000619220015-5"

SUBJECT USSR / PHYSICS CARD 1 / 2 PA - 1616
AUTHOR IVANOVA, N.S.
TITLE The Cross Section of the Fissioning of Uranium by Protons with High Energies (from 140 to 660 MeV).
PERIODICAL Žurn.eksp.i teor.fis, 31, fasc.3, 413 - 415 (1956)
Issued: 12 / 1956

In the course of the present work these fission cross sections are investigated within a wide energy interval (140, 350, 460 and 660 MeV) with thick layer photo-plates. The protons with these energies originate from the synchrocyclotron of the Institute for Nuclear Problems of the Academy of Science of the USSR; they were slowed down in copper- and paraffin filters. The uranium was introduced into the photoemulsion by saturaciong the latter in an aqueous solution of $NaUO_2(C_2H_3O_2)_3$. The fission cross sections were determined a) by means of relativistic emulsions (NIKFI -R and ILFORD G-5) and b) by the fine-grained emulsion P-9, the sensitivity of which is low. The latter emulsion is able to stand a primary proton current that is from 20 to 25 times as intense as that in the case of "relativistic" emulsions. The intensity of the proton current could be determined in the case of the relativistic protons by counting the traces of primary protons on the same photo-plate on which also a certain number of fissions was noticed. Also the determination of intensity in the case of plates with lower sensitivity is discussed.

Measuring results are shown together in a table and the average values of the fission cross sections obtained are illustrated in form of a diagram. The fission cross section of uranium increases with an increas of the energy of the inciding proton, after which



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IVANOVA, N.S.

Cross section of uranium fission induced by high-energy protons and the analysis of light charged particles accompanying the fission. Atom.energ.supplement no.1:115-128 '57. (MIRA 10:10)
(Nuclear fission)

PA - 1736

CARD 1 / 2

SUBJECT USSR / PHYSICS

AUTHOR IVANOVA,N.S.

TITLE The Average Excitation Energy of Uranium Nuclei Fissioned on the Occasion of the Absorption of Slow Negative Pions.

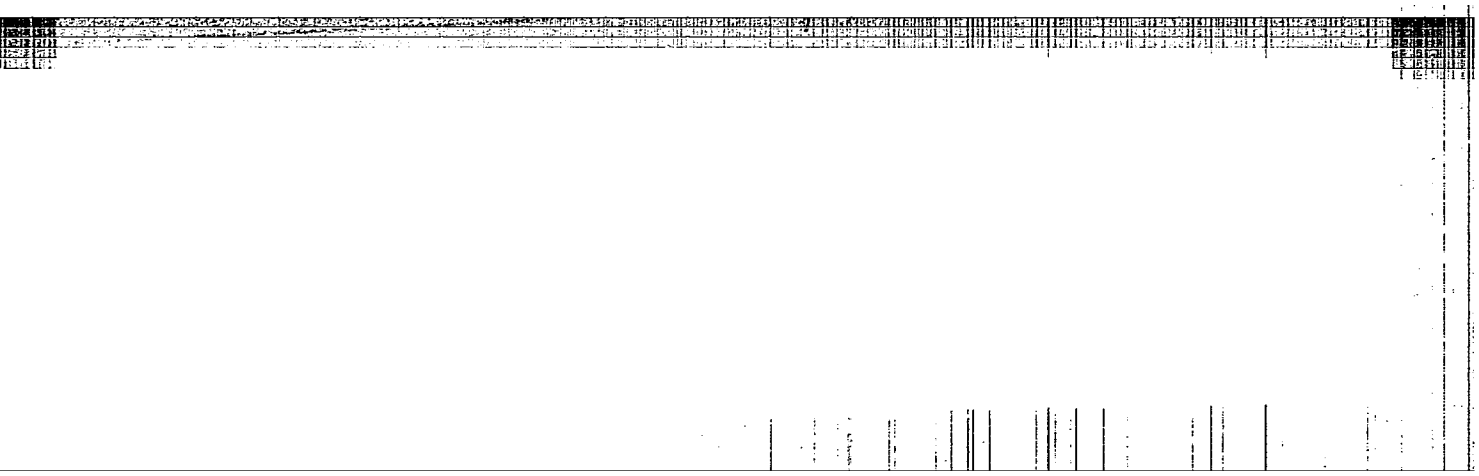
PERIODICAL Zurn.eksp.i teor.fis,31,fasc.4, 693-694 (1956)
Issued: 1 / 1957

The fission of uranium nuclei on the occasion of the absorption of slow negative pions can be looked upon as a fission under the effect of fast nucleons which were created as the result of the interaction of the negative pion with a pair of nucleons (n,p) or (p,p) of the nucleus. The fast nucleons created in this manner can be subjected to collisions with the nucleons of the nucleus when passing through the uranium nucleus. On this occasion a nuclear cascade process is introduced, and the nucleus remains in an excited state. A comparison of fission of U^{238} nuclei by slow negative pions and by 140 MeV protons facilitates a certain evaluation of the average excitation energy of the uranium nuclei fissioned on the occasion of the capture of slow negative pions. A diagram illustrates the curves of the distribution of the individual fragments over the ranges on the occasion of fissions caused by negative pions and 140 MeV protons. However, agreement of these curves does not yet permit any conclusion to be drawn as to the equality of the average excitation energies of the fissioning nuclei. The existence of a distinctly marked maximum is essential for fission by negative pions. This maximum shows that in this case average excitation energy is noticeably higher than 50 MeV. The upper limit of this average excitation

IVANOVA, N.S.

"Cross Section of Uranium Fission Induced by HighEnergy Protons and Analysis of the Light Charged Particles Accompanying Fission", Atomnaya Energiya, Vol 2, No I, Jan 57, p I00.

SUM. I322



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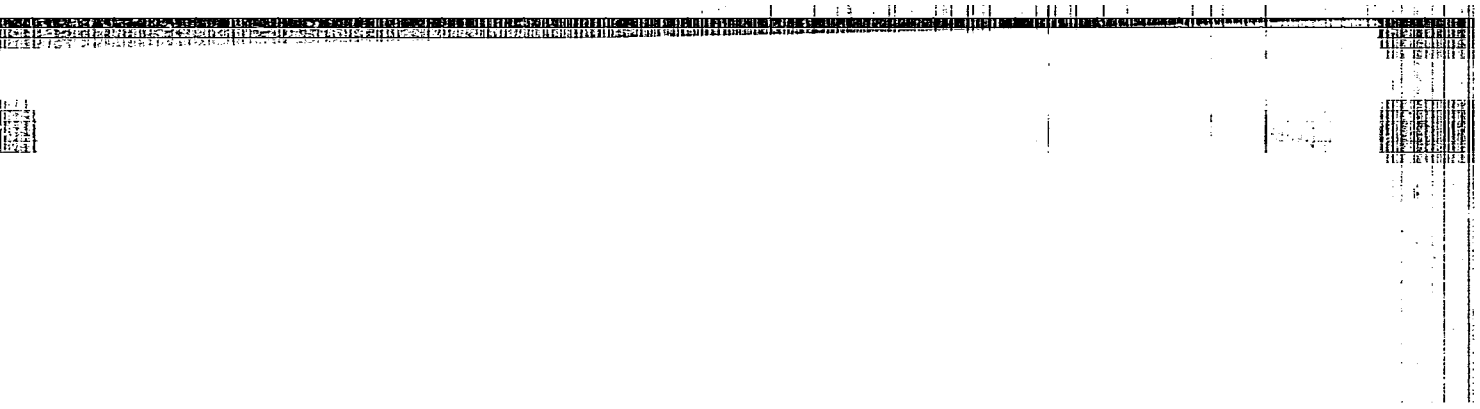

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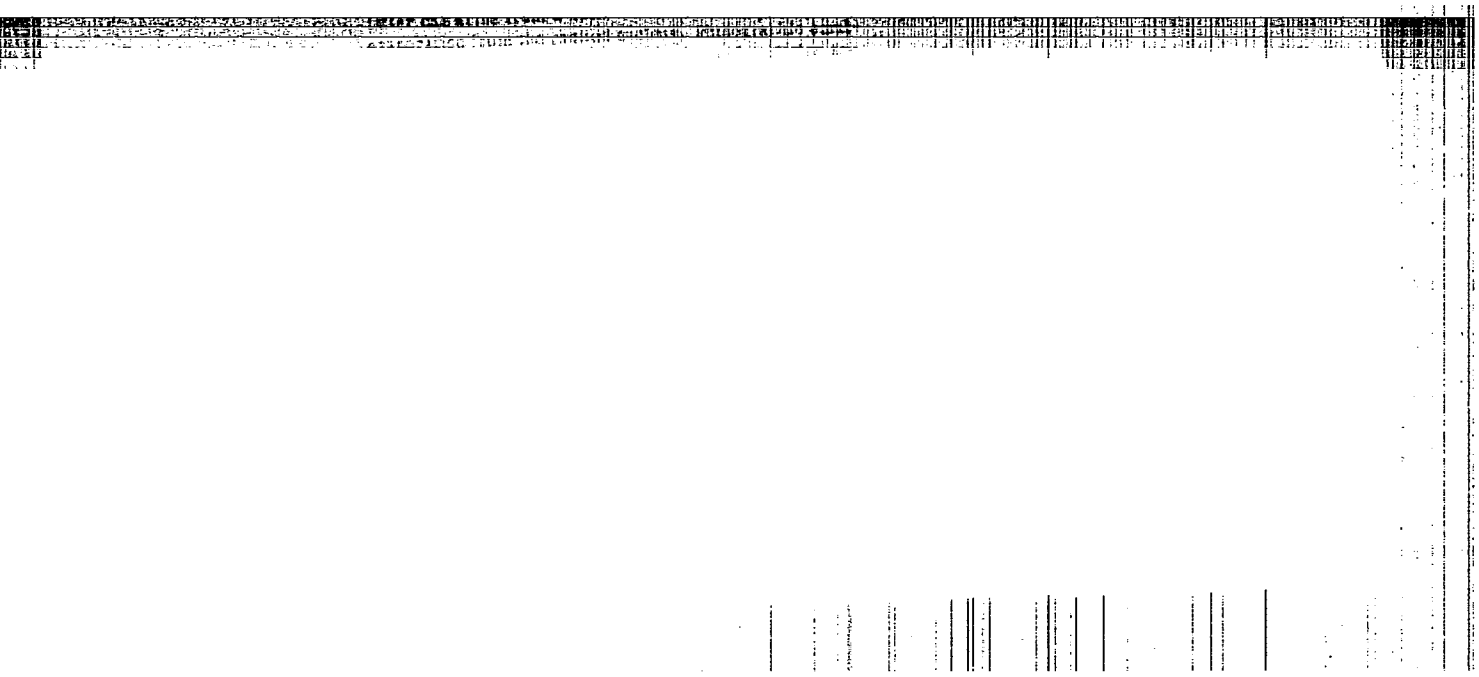

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N.S. IVANOVA, V.I. Ostroumov,

"ANGULAR CORRELATION OF CHARGED PARTICLES FROM FISSION OF URANIUM NUCLEI INDUCED BY HIGH ENERGY PROTONS AND FI-MESONS"

by N. S. Ivanova, V. I. Ostroumov

Report presented at 2nd U. Atoms-for-Peace Conference, Geneva, 9-13 September 1958

IVANOVA N.S.

AUTHOR: Ivanova, N. S. SOV/56-34-6-3/51

TITLE: The Fission of Uranium Nuclei and the Production of Multi-charged Fragments on the Nuclei of the Emulsion Induced by the Positive Pions With High Energy (Deleniye yader urana i obrazovaniye mnogozaryadnykh oskolkov na yadrakh emul'sii pod deystviyem π^+-mezonov bol'shoy energii)

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1958, Vol 34, Nr 6, pp 1381-1388 (USSR)

ABSTRACT: The positive pions are assumed to have an energy of 280 MeV. The first part of this paper deals with the interaction of the positive pions (λ = 280 MeV) with the uranium nuclei. This interaction causes the fission of the nuclei. The uranium was introduced into the emulsion before the irradiation by penetrating the photographic plates by a 4 % aqueous solution of $UO_2Na(C_2H_3O_2)_3$. The author used relativistic emulsions and also emulsions with a sensibility limit (with respect to protons) of 45-50 MeV (emulsion Ш-9). The author found and investigated 73 cases of uranium fission by fast positive pions in the relativistic emulsion and 460 cases in the emul-

Card 1/4

The Fission of Uranium Nuclei and the Production of Multicharged Fragments on the Nuclei of the Emulsion Induced by the Positive Pions With High Energy

sion π-9. A table gives the average numbers of the charged particles corresponding to 1 fission by positive pions. For a comparison the same table gives the analogous values for the fission caused by fast protons with 350 and 140 MeV and by slow negative mesons. The former values are much greater than the latter ones. The fission of the uranium nuclei by positive pions may be caused by the penetration of fast nucleons through the nucleus. These nucleons are produced during the absorption of the meson and also by the scattering of a meson with a great energy transfer. A diagram shows the distribution of the fragments with respect to their ranges in the emulsion. The cross section of the fission of uranium by positive 280 MeV pions amounts to

$$(1,0 \pm 0,2).10^{-24} cm^2.$$

In his experiments with the relativistic emulsion, the author recorded 24 interactions of positive 280 MeV pions with the emulsion nuclei which cause the production of multicharged ($Z > 4$) fragments (and 65 such interactions during the experiments with the emulsion π -9). A table gives some data

Card 2/4

The Fission of Uranium Nuclei and the Production of Multicharged Fragments on the Nuclei of the Emulsion Induced by the Positive Pions With High Energy

which characterize the stars in the emulsions. For the cross section of the production of multicharged fragments by positive 280 MeV fragments on the heavy nuclei of the emulsion (Ag, Br) the value $(0,62 \pm 0,2).10^{-27}$ cm^2 was found. The absorption of the positive pion is not necessary for the production of a multicharged fragment by this meson. The preliminary results of this paper do not contradict to the assumption that the production of the multicharged fragments during the interaction of the fast positive pions with the nuclei is caused by the fast nucleons which appeared during the first scattering of the positive pion on the nucleon with a great energy transfer. The author thanks B. S. Neganov, scientifical co-worker of the Ob"yedinennyy institut yadernykh problem AN SSSR (United Institute for Nuclear Problems of the AS USSR) for his help in the irradiation of the photoplates and N. A. Perfilov, Professor, for his constant interest in this paper. There are 6 figures, 2 tables, and 34 references, 8 of which are Soviet.

SOV/56-34-6-3/51

The Fission of Uranium Nuclei and the Production of Multicharged Fragments on the Nuclei of the Emulsion Induced by the Positive Pions With High Energy

ASSOCIATION: Radiyevyy Institut Akademii nauk SSSR
(Radium Institute, AS USSR)

SUBMITTED: December 7, 1957

Card 4/4

IVANOVA, N. S.

21(0) PHASE I BOOK EXPLOITATION SOV/2081

International Conference on the Peaceful Uses of Atomic Energy, 2d., Geneva, 1958

Doklady sovetskikh uchenykh; yadernaya fizika (Reports of Soviet Scientists; Nuclear Physics) Moscow, Atomizdat, 1959. 552 p. (Series: Its: Trudy, Vol. 1) 8,000 copies printed.

Eds. (Title page): A.I. Alikhanov, Academician; V.I. Veksler, Academician; and N.A. Vlasov, Candidate of Physical and Mathematical Sciences; Ed. of this volume: S.I. Brezdev and B.F. Zaretskiy, Candidates of Physical and Mathematical Sciences; Ed. (Inside book): G.L. Smolyan; Tech. Ed.: Ye.I. Mazel'.

PURPOSE: This collection of articles is intended for scientific research workers and other persons interested in nuclear physics. The volume contains 43 papers presented by Soviet Scientists at the Second Conference on Peaceful Uses of Atomic Energy, held in Geneva in September 1958.

COVERAGE: It is divided into two parts. Part I contains 17 papers dealing with plasma physics and controlled thermonuclear Reactions, and Part II contains 26 papers on nuclear physics, including problems of particle acceleration and of cosmic ray physics. The first paper by L.A. Artsimovich presents a review of Soviet work on controlled thermonuclear reactions. The remaining papers in Part I deal with particular problems in this field.
papers in Part II deal in detail with various problems in nuclear physics, such as the fission of heavy atoms and their isotopes, and with the study of cosmic radiation by means of artificial earth satellites and rockets, described in a paper by S.N. Vernov. The Russian-language edition of the proceedings of the conference is published in 16 volumes. The first 6 volumes contain all the papers presented by Soviet scientists as follows: Volume (1), Yadernaya fizika (Nuclear Physics); Volume (2), Yadernyye reaktory i yadernaya energetika (Nuclear Reactor and Nuclear Power); Volume (3), Yadernoye goryucheye metally (Nuclear Fuel and Reactor Metals), Volume (4), Khimiya radioelementov i radiatsionnykh prevrashcheniy (Chemistry of Radioelements and of Radiation Transformations); Volume 5, Radiobiologiya i radiatsionnaya meditsina (Radiobiology and Radiation Medicine); Volume (6) Polucheniye i primeneniye izotopov (Production and Use of Isotopes). The other 10 volumes contain selected papers presented at the Conference by non-Soviet scientists. In the present volume discrepancies between the English and Russian language edition of the proceedings have been noted in three articles where the texts are not identical; Andrianov, et al, "High Current Pulsed Discharge"; Akhiyezer, et al, "High Frequency Plasma Oscillation"; and Bogolyubov, "Investigations of the Many-body Problem". The serial numbers of reports 2302 and 2504 are reversed in the English edition. Report 2211, by Shmalnikov, et al, is numbered 2536 in the English edition.

TABLE OF CONTENTS:

Reports of Soviet Scientists; Nuclear (Cont.) SOV/2081

Card 11/23

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24.6900,16.8100

76975
SOV/56-37-6-15/55

AUTHORS: Ivanova, N. S., Ostroumov, V. I., Pavlov, Yu. V.

TITLE: Production of Multi-Charged Particles on Photographic Emulsion Nuclei by 280-mev π^+-Mesons

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1959, Vol 37, Nr 6, pp 1604-1612 (USSR)

ABSTRACT: A study was made with the aid of photographic emulsions (relativistic type P-R and less sensitive type P-9) of the fragment production in nuclear disintegrations induced by 290-mev π^+-mesons. The angular charge, and density distributions of the emitted fragments were measured and plotted on graphs. The stars formed by π^+-mesons were found to contain 223 fragments of which 61 were located in the relativistic type emulsion. Some 60% of all fragments were due to the interaction of π-mesons with heavy nuclei and 40%, with light nuclei.

Card 1/4

Production of Multi-Charged Particles on Photographic Emulsion Nuclei by 280-mev π^+-Mesons

76975
SOV/56-37-6-15/55

The criterion of the subdivision of these classes was analogous to that of V. I. Ostroumov, N. A. Perfilov, and R. A. Filov (Zhur. eksp. i teoret. fiz., 36, 367, 1959), O. V. Lozhkin, N. A. Perfilov (ibid., 31, 913, 1956), and O. V. Lozhkin (Dissertation, Radium Inst. Acad. Sciences, USSR, Lengingrad, 1957). In the case of heavy nuclei, the relative yield of fragments of different charges was nearly independent of the energy of the bombarding particles. The comparison of the experimental data with the theoretical data showed that the particles responsible for the formation of fragments are protons produced in the absorption of π^+-mesons by quasi-deutron pairs and also recoil nucleons produced in the scattering of π-mesons on separate nucleons of the nucleus. The fragmentation cross sections for heavy and light particles were found to be, respectively: (1.4 ± 0.5) mbn, and (0.56 ± 0.3) mbn. The ratio of

Card 2/4

Production of Multi-Charged Particles on Photographic Emulsion Nuclei by 280-mev π^+-Mesons

76975
SOV/56-37-6-15/55

the probability of absorption according to scheme $\pi^+ + d \longrightarrow p + p$ (W_d) and scheme $\pi^+ + N \longrightarrow \pi + N$ (W_p), ($W_d/W_d = W_p = 0.6$), for π^+-mesons at 280-mev energy level, accorded with the results of other investigations (G. A. Blinov, M. F. Lomanov, Ya. Ya. Shalamov, V. A. Shevanov, and V. A. Shchegolev, Zhur. eksp. i teoret. fiz., 35, 880, 1958; G. E. Belovitskiy, ibid., 35, 838, 1958). The experimental data did not absolutely support the probability of the absence of direct ejection of fragments by mesons; however, this probability was a small one. S. A. Tartakovskaya and N. A. Perfilova made contributions in the course of this work. There are 9 figures; and 13 references, 8 Soviet, 1 Italian, 1 French, 3 U.S. The U.S. references are R. Wolfgang, E. Baker, A. Caretto, J. Cumming, G. Friedlander, J.

Card 3/4

Prbduction of Multi-Charged Particles on Photographic Emulsion Nuclei by 280-mev π^+-Mesons

76975
SOV/56-37-6-15/55

Hudis, Phys. Rev., 103, 394, 1956; R. Wolfgang, G. Friedlander, Phys. Rev. 96, 190, 1954; M. Blau, A. Oliver, Phys. Rev., 102, 489, 1956.

ASSOCIATION: Radium Inst. Acad. Sciences USSR (Radievyy institut Akademii nauk SSSR)

SUBMITTED: July 21, 1959

Card 4/4

IVANOVA, N.S.

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B006/B011

21.5200
24.6600

AUTHORS: Perfilov, N. A., Ivanova, N. S., Lozhkin, O. V., Makarov, M. M., Ostroumov, V. I., Solov'yeva, Z. I., Shamov, V. P.

TITLE: Fragmentation of Ag and Br Nuclei at Proton Energies of 9 Bev

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1960, Vol. 38, No. 2, pp. 345 - 350

TEXT: The authors of the paper under review offer the first results obtained from their investigation of Ag and Br fragmentation (nuclear disintegration in multicharged particles with $Z \geq 4$) by 9-Bev protons. Small emulsion chambers consisting of ten layers of the II-P (P-R) emulsion (200μ thick) were irradiated on the proton synchrotron of the OIYaI (Joint Institute of Nuclear Research) with a 9-Bev proton beam. The individual layers were numbered by a method by V. M. Sidorov and M. I. Trukhin. In the interpretation of the emulsions, such nuclear disintegrations were selected as contained tracks of particles with $Z \geq 4$.

Card 1/4

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Fragmentation of Ag and Br Nuclei at Proton Energies of 9 Bev

S/056/60/038/02/06/061
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Depending on the proton energy, the disintegrations were divided into "black" ($E_p < 30$ Mev), "gray" ($E_p \leq 1$ Bev), and "thin" ($E_p > 1$ Bev) ones. For the charge determination, the integral track width was determined with an ocular micrometer. On interpreting the results, the authors found 1,028 disintegrations with four or more prongs each; among them were, as an analysis revealed, 188 ordinary ones having fragments with $Z \geq 4$. Further 709 events were established, in which such fragments occurred, that is a total of 997 disintegrations having fragments with $Z \geq 4$ [Abstracter's Note: One of the above figures must be wrong, since 188 + 709 = 897]. The experimental results are described in detail. a) Characterization of nuclear disintegrations with fragments. A table specifies the average prong numbers for the individual star types. The average number of particles is considerably higher in disintegrations with fragments than it is in ordinary disintegrations, especially in disintegrations with several fragments and in such with fast fragments (range > 100 μ). b) Production cross section of stars with fragments. For stars having fragments with $Z \geq 4$ in Ag- and Br disintegrations it was found to be 100 ± 30 mb, viz.

Card 2/4

Fragmentation of Ag and Br Nuclei at Proton Energies of 9 Bev

about 10% of the total inelastic interaction cross section. Fig. 2 illustrates the fragmentation cross section as a function of E_p. In the range of proton energies around 1 Bev there appears a steep climb of the cross section. c) Multiplicity in fragment production. The quantity of stars with two or more tracks of multicharged particles is found to grow with the energy of bombarding protons. At E_p = 9 Bev this relative quantity amounts to 0.2, at 660 Mev 0.05 only. d) Nature of fragments. Fig. 3 shows the charge distribution of the fragments: The number of particles decreases in a practically linear manner with growing charge. The charge distribution differs only little from the one found at lower energies of the bombarding particles. e) Angular and energy distributions of the fragments. Their angular distribution was determined by a method by V. I. Ostroumov and R. A. Filov; it is illustrated in Fig. 4 with respect to the proton direction of incidence (for events with one fragment, with fast fragments, and with two or more fragments). Distribution becomes more anisotropic with increasing fragment energy. The forward-backward ratio is 3.6 ± 1.1 at $R > 100\ \mu$. The angular distribution is less anisotropic at E_p=9 Bev with respect to the proton direc-

Card 3/4

Fragmentation of Ag and Br Nuclei at Proton Energies of 9 Bev

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B006/B011

tion than it is at $E_p < 1$ Bev. The three diagrams of Fig. 6 show the energy distribution for particles with the charges 4, 5, and 6. It is only little dependent on E_p (cf. Fig. 7). f) Hyperfragment production. Three cases of a hyperfragment production (one of them with a charge equal to 6) were recorded among the 997 fragmentation events. The authors finally thank the team of the laboratoriya vysokikh energiy Ob"yedinennogo instituta yadernykh issledovaniy (High-energy Laboratory of the Joint Institute of Nuclear Research) for assistance given in the irradiation of the emulsion chambers. There are 7 figures, 1 table, and 9 references: 8 Soviet and 1 Japanese.

ASSOCIATION: Radiyevyy institut Akademii nauk SSSR (Radium Institute of the Academy of Sciences, USSR)

SUBMITTED: August 1, 1959

Card 4/4

88422

S/056/60/039/006/006/063
B006/B056

24.6900

AUTHORS: Assovskaya, A. S., Ivanova, N. S.

TITLE: Fragment Production on Photoemulsion Nuclei Under the Action of 80-Mev π^+-Mesons

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1960, Vol. 39, No. 6(12), pp. 1511-1516

TEXT: Photoemulsion nuclei were bombarded with 80-Mev π^+ mesons and the appearance of multiply charged particles was investigated. At this low pion energy, a knocking-out of multiply charged particles is impossible. Fragmentation cross section, angular, charge- and energy distributions of the departing fragments were determined, and the results obtained were compared with those obtained by using 280-Mev pions and high-energy nucleons. The fine-grained Π-P (P-R)emulsion supplied by the laboratory of N. A. Perfilov in the RIAN was irradiated on the synchrocyclotron of the OIYaI (Joint Institute of Nuclear Research) by means of a π^+-meson beam of (80±5)Mev. The fragment charge was estimated according to the integral thickness of the track. Altogether, 108 fragmentation events were found, of

Card 1/3

Fragment Production on Photoemulsion Nuclei Under the Action of 80-Mev π^+-Mesons

S/056/60/039/006/006/063
B006/B056

which 64%, corresponding to the selection criteria, could be ascribed as reactions of π^+ with heavy and 36% of such with light nuclei. A comparison of the fragmentation cross sections measured (in 10^{-27} cm^2 for $Z \geq 4$) gave the following results:

E_{π^+}	80 Mev	280 Mev (Ref.3)
σ on heavy nuclei	1.2 ± 0.5	1.4 ± 0.5
σ on light nuclei	0.4 ± 0.2	0.56 ± 0.3

Charge-, energy-, and angular distribution are graphically represented. Also the angular distribution of the fragments accompanied by fast protons was investigated. The emission of a pion could never be established. From the results obtained and from a comparison with the theory the conclusion may be drawn that at such low pion energies the fragment production is preceded by a $\pi^+ + d \rightarrow p + p$-reaction, i.e., the pion is absorbed by a quasideuteron in the nucleus, and only fast proton produced thereby is responsible for the fragmentation. The assumption of a fragment ejection

88422

Fragment Production on Photoemulsion Nuclei Under the Action of 80-Mev π^+-Mesons

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by protons is quite compatible with experimental results. The authors thank A. I. Mukhin for his help in the irradiation of emulsions, V. I. Ostroumov for taking part in the discussions, and Professor N. A. Perfilov for his interest. U. R. Arifanov and M. M. Makarov are mentioned. There are 5 figures and 8 references: 4 Soviet, 1 French, and 3 US.

ASSOCIATION: Radiyevyy institut Akademii nauk SSSR
(Radium Institute of the Academy of Sciences USSR)

SUBMITTED: June 18, 1960

Card 3/3

MINENKO, V.I.; PETROV, S.M.; IVANOVA, N.S.

Behavior of the platinum electrode in electrochemical studies of molten oxide mixtures. Zhur.fiz.khim. 36 no.10:2300-2302 O '62. (MIRA 17:4)

1. Khar'kovskiy inzhenerno-ekonomicheskiy institut, laboratoriya fizicheskoy khimii.

ACCESSION NR: AP4009096 S/0056/63/045/006/1793/1802

AUTHORS: Gagarin, Yu. F.; Ivanova, N. S.

TITLE: Fragment production induced in emulsion nuclei by 7.5 BeV negative pions

SOURCE: Zhurnal eksper. i teoret. fiziki, v. 45, no. 6, 1963, 1793-1802

TOPIC TAGS: fragment production, hyperfragment production, emulsion nuclei, pion induced fragmentation, pion complex nucleus interaction, pion scattering, pion absorption

ABSTRACT: The angle, energy, and charge distribution of fragments produced by interactions between 7.5 BeV pions and the Ag or Br nuclei in the emulsion are measured. The investigation is aimed at checking on the suggestion made by Wolfgang et al (Phys. Rev. v. 103, 394, 1956) that mesons created in the nuclei play an important

Card 1/β~

ACCESSION NR: AP4009096

part in the fragmentation of nuclei bombarded by high-energy nucleons, and also at clarifying the mechanism underlying hyperfragment production. Disintegrations with and without fragment production are analyzed for the same reason, and from a comparison with fragmentation induced by pions of different energies it is concluded that cascade nucleons do play an important role in the fragmentation process. A comparison of the angle, energy, and charge distribution of hyperfragments with those of fragments leads to the hypothesis that the fragment and hyperfragment productions are essentially identical processes. "We wish to thank S. I. Lyubomilov and the staff of his laboratory for irradiating and processing the emulsion, and professor N. A. Perfilov for continuous interest in the work."
Orig. art. has: 8 figures, 1 formula, and 2 tables.

ASSOCIATION: Fiziki-tekhnicheskiy institut im. A. F. Ioffe AN SSSR (Physicotechnical Institute AN SSSR)

Card 2/3

IVANOVA, N.S.; SPEKTOROVA, L.V.

Reversible bleaching of chlorella induced by some mechanical forces. Fiziol. rast. 11 no.1:137-138 Ja-F '64.
(MIRA 17:2)

1. Moskovskiy gosudarstvennyy universitet.

MINENKO, V.I.; IVANOVA, N.S.

Activity of lead oxide in melts of the PbO - SiO_2 system. Ukr. khim. zhur. 29 no.11:1160-1164 '63. (MIRA 16:12)

1. Khar'kovskiy inzhenerno-stroitel'nyy institut.

S.A. IVANOVA, N.V.

535.371 : 621.327.43

7183. Influence of temperature on the colour properties of the type TB fluorescent lamp. N. V. CHORKASOV AND N. S. IVANOVA. *Zh. Tekh. Fiz.*, 21, 1029–34 (No. 9, 1951) In Russian.

An experimental investigation of a change of colour in the direction pink to yellow of the type TB ("warm white") fluorescent lamp, over the ambient temperature range 25–65°C, showed the cause of the change to be a change in the emission of the $Zn_2Be(SiO_4)$ phosphor, combined with a relative intensification of emission of the Hg vapour. P. QUELEN

IVANOVA,N.S., kandidat tekhnicheskikh nauk; LEVINA,A.D., inzhener; LEVINA,L.Ye., inzhener

Control and approval of light fixtures. Svetotekhnika 1 no.3: 28-29 Je'55. (MLRA 8:10)

(Electric light fixtures)

IVANOVA, N.S., kandidat tekhnicheskikh nauk.

Scientific and technical conference on the anniversary of the Moscow Institute. Svetotekhnika 2 no.1:28 Ja '56. (MLRA 9:3)
(Moscow--Electric engineering--Study and teaching)

GUREVICH, M.M., professor; KARYAKIN, N.A., professor; MESHKOV, V.V., professor; SOKOLOV, M.V., professor; TIKHODEYEV, P.M., professor; FABRIKANT, V.A., professor; IVANOVA, N.S., kandidat tekhnicheskikh nauk; SHNEYBERG, Ya.A.; YUROV, S.G.; ASHKENAZI, G.I., inzhener.

Professor L.D. Bel'kind; on his sixtieth birthday. Svetotekhnika 2 no.5:26 S '56. (MLRA 9:11)

(Bel'kind, Lev Davidovich, 1896-)

IVANOVA, N.S., kandidat tekhnicheskikh nauk.

Effect of color adaptation on light perception. Svetotekhnika 3 no.3:11-16 Mr '57. (MLRA 10:3)

1. Vsesoyuznyy svetotekhnicheskiy institut.
(Optics, Physiological)

IVANOVA, N.S., kand. tekhn. nauk; SKOBELEV, V.M., kand. tekhn. nauk.

Significant dates in Soviet lighting engineering. Svetotekhnika 3 no.11:36-39 N '57. (MIRA 10:12)

(Lighting--History)

VUL'FSON, K.S., prof.; GUREVICH, M.M., prof.; MESHKOV, V.V., prof.; NILENDER, R.A., prof. YUROV, S.G., kand. tekhn. nauk; SOKOLOV, M.V., prof.; BIBERMAN, L.M., kand. tekhn. nauk; BUTAYEVA, F.A., kand. tekhn. nauk; IVANOVA, N.S., kand. tekhn. nauk; SUSHKIN, N.G., kand. tekhn. nauk.

Valentin Aleksandrovich Fabrikant; on his 50th birthday. Svetotekhnika 3 no.12:24-25 D '57. (MIRA 11:1)
(Fabrikant, Valentin Aleksandrovich, 1907-)

IVANOVA, N.S., kand. tekhn. nauk; AYZENBERG, Yu.B., inzh.

All-Union illuminating engineering conference. Svetotekhnika 4 no.5: 27-28 My '58. (MIRA 11:5)
(Lighting--Congresses)

IVANOVA, N.S., kand.tekhn.nauk

Artificial lighting of offices. Svetotekhnika 4 no.11:28-32 N '58. (MIRA 11:11)

(United States--Lighting)

24(4) PHASE I BOOK EXPLOITATION SOV/2990

Kratkiy svetotekhnicheskiy spravochnik (Short Handbook on Lighting Engineering) Moscow, Gosenergoizdat, 1959. 79 p. 3,000 copies printed.

Comps.: N. S. Ivanova, Candidate of Technical Sciences and Yu. B. Ayzenberg, Engineer; Ed.(Title page): V. V. Meshkov, Professor; Ed. (Inside book): G. I. Ashkenazi; Tech. Ed.: N. I. Borunov.

PURPOSE: This booklet is intended for engineers and technicians engaged in the design, planning, and operation of lighting installations.

COVERAGE: The handbook contains fundamental values and units used in illumination engineering, norms of artificial lighting, a description of main types of illuminating apparatus in production in the Soviet Union, and recommended methods of computing the efficiency of lighting installations. Figures and tables are given with each section. No personalities are mentioned. No references are given.

Card 1/2

Short Handbook on Lighting Engineering SOV/2990

TABLE OF CONTENTS:

AVAILABLE: Library of Congress

Card 2/2

TM/lsb
1-28-60

BOGOLYUBOV, A.L., inzh.; BURSKIY, V.B., inzh.; IVANOVA, N.S., kand. tekhn. nauk.

"Lighting fixtures" by V.A. Dzugaev, L.V. Vasilenko. Reviewed by A.L. Bogoliubov, V.B. Burskii, N.S. Ivanova. Svetotekhnika no.1: 29-31 Ja '59. (MIRA 12:1)
(Lighting--Equipment and supplies)
(Dzugaev, V.A.) (Vasilenko, L.V.)

IVANOVA, N.S., kand. tekhn. nauk

Limitation of the blinding action of luminaires in dwellings.
Svetotekhnika 5 no.8:9-13 Ag '59. (MIRA 13:2)

1.Vsesoyuznyy svetotekhnicheskiy institut.
(Electric lighting)

IVANOVA, N.S., kand.tekhn.nauk

Electric lighting of public buildings in Paris. Svetotekhnika 6 no.4:15-20 Ap '60. (MIRA 13:6)

1. Vsesoyuznyy svetotekhnicheskiy institut.
(Paris--Lighting)

IVANOVA, N.S., kand.tekhn.nauk; AYZENBERG, Yu.B., insh.

Meeting of workers of the electric lighting industry. Svetotekhnika 6 no.5:26-29 My '60. (MIRA 13:12)
(Electric lighting--Congresses)

IVANOVA, N.S., kand.tekhn.nauk; MARKIZOVA, [illegible].B., inzh.

Nomenclature of light fixtures for dwellings. Svetotekhnika 7 no.3:8-15 Mr '61. (MIRA 14:8)

1. Vsesoyuznyy svetotekhnicheskiy institut.
(Electric light fixtures)

BELOVA, L.T., kand.tekhn.nauk; GORBACHEV, N.V., kand.tekhn.nauk;
IVANOVA, N.S., kand.tekhn.nauk; KROL', T3.I., kand.tekhn.nauk;
OSTROVSKIY, M.A., kand.tekhn.nauk; SHEFTEL', Yo.B., kand.tekhn.nauk;
TSAR'KOV, V.M., inzh.

Proposed new version of "Norms on electric lighting."
Svetotekhnika 7 no.8:14-22 Ag '61. (MIRA 14:7)

1. Vsesoyuznyy svetotekhnicheskiy institut.
(Electric lighting--Standards)

IVANOVA, N.S., kand.tekhn.nauk; SVIRIDOV, Yu.I., inzh.

Some results of quality control in mass production. Svetotekhnika 8 no.11:27 N '62. (MIRA 15:10)

1. Vsesoyuznyy svetotekhnicheskiy institut.
(Electric light fixtures)
(Electric equipment industry—Quality control)

AYZENBERG, Yu.B.; GORBACHEV, N.V.; GOREV, Z.M.; DEMCHEV, V.I.; YEFIMKINA, V.F.; IVANOVA, N.S.; KOMISSAROV, V.D.; MARKIZOVA, G.B.; MESHKOV, V.V.; OSTROVSKIY, M.A.; RATNER, Ye.S.; SHEFTEL', Ye.B.; YUROV, S.G.

Nikolai Nikolaevich Ermolinskii; obituary. Svetotekhnika 8 no.12:28 D '62. (MIRA 16:1)
(Ermolinskii, Nikolai Nikolaevich, 1894-1962)

IVANOVA, N.S., kand. tekhn. nauk

Fifteenth Session of the International Commission on Illumination. Svetotekhnika 9 no.8:30 Ag '63. (MIRA 16:8)

(Electric lighting--Congresses)

80836

S/072/60/000/06/10/024
B015/B008

15.2120

AUTHORS: Minenko, V. I., Petrov, S. M., Ivanova, N. S.

TITLE: On the Nature of Molten Glasses of the System Lead Monoxide-Silicon Dioxide

PERIODICAL: Steklo i keramika, 1960, No. 6, pp. 34 - 37

TEXT: The thorough investigation of the melts of the system $PbO-SiO_2$ in the wide range of concentrations and temperatures was the aim of the paper under review. The method of the electromotive force was used as the essential experimental investigation method. Measurement of the electromotive force was conducted by means of the high-resistance potentiometers of the Raps system and type ППТВ-1 (PPTV-1) respectively. The typical dependence of the electromotive force on the composition of the melt is shown in Fig. 1. The dependences of the density and molecular refraction of the glasses are mentioned in Figs. 2 and 3. The curves were represented in accordance with data by L. I. Demkina and P. V. Bukarinova (Ref. 2). The data obtained by the authors agree with the conceptions of

Card 1/2

80836

On the Nature of Molten Glasses of the System Lead Monoxide-Silicon Dioxide

S/072/60/000/06/10/024
B015/B008

O. K. Botvinkin (Ref. 3). The authors finally stress that their data make it possible to clarify the nature of the dependence of the glass properties of the system $PbO-SiO_2$ on the composition of the glasses. The short-range order and the grouping of the ions in the melt are also maintained in the solidified glass. There are 3 figures and 2 Soviet references.

Card 2/2

MINENKO, V.I.; PETROV, S.M.; IVANOVA, N.S.

Use of reversible oxygen electrodes in oxygen-containing melts.
Izv.vys.ucheb.zav.; chern.met. no.7:10-13 '60. (MIRA 13:8)

1. Khar'kovskiy inzhenerno-ekonomicheskiy institut.
(Electolytes--Testing)
(Electrodes, Platinum)
(Oxygen)

MINENKO, V.I.; PETROV, S.M.; IVANOVA, N.S.

Electromotive forces in the melts of the system PbO - SiO_2 at 1100°. Zhur. VKHO 5 no. 2:230-231 '60. (MIRA 14:2)

1. Khar'kovskiy inzhenerno-ekonomicheskiy institut.
(Lead oxide) (Silica)

S/076/61/035/007/013/019
B127/B208

AUTHORS: Minenko, V. I., Petrov, S. M., and Ivanova, N. S.

TITLE: The behavior of a platinum electrode in silicate melts

PERIODICAL: Zhurnal fizicheskoy khimii, v. 35, no. 7, 1961, 1534-1537

TEXT: The purpose of this study was to design an electrode for investigating melts containing oxides of various metals, since the errors of previous methods were 10-15%. The platinum electrode was tested in concentration cells of the type $Pt,O_2(P_{O_2})$ (melt I),$|Al_2O_3|$(melt II) $O_2(p'_{O_2})$, Pt with the electrolytes $PbO-SiO_2$, $Na_2O-CaO-SiO_2$ and $MeO-PbO-SiO_2$, MeO being oxides of the alkaline earth group. A reaction of the following type was assumed in each case: $2\,O^{2-} = O_2 + 4e$. The dependence of the potential of the platinum electrode on the activity of the oxygen ions may be expressed by the formula: $\pi = A-B \log a_{O^{2-}}$. The quantity n in the relation

Card 1/3

The behavior of a platinum...

B=2.303 RT/nF was about 4 in all cases. The emf of the cell: $Pt,O_2(p_{O_2} = 0.21\ at)|PbO\ (70.4\ wt\%) + SiO_2(29.6\ wt\%)\ |Al_2O_3|SiO_2(100-x\ wt\%) + PbO\ (x\ wt\%)|O_2(p'_{O_2} = 0.21\ at)$, pt as a function of the logarithm of the molar content of PbO $(1+\log N_{PbO})$ in the system $4\ PbO.SiO_2$-PbO at 490°C is given by a straight line. At 1000°C the emf of the cells is also a linear function of $(1+\log p_{O_2})$. By increasing the partial pressure p'_{O_2} the potential becomes more positive and $\pi=A'+B'\log p'_{O_2}$ holds, where $A'=A-B\log a_{O^{2-}}$, $B'=2.303\ RT/nF$. The following reactions take place at the electrode: $O_2(gas) \rightleftarrows 2\ O_{(Pt)} \rightleftarrows 2\ O^{2-}_{(Pt)} \rightleftarrows 2\ O^{2-}_{(melt)}$. The first process depends on the O_2 pressure in the gaseous phase, the second on the electrode surface, the third on the activity of the oxygen ions in the melt. The potential of

Card 2/3

The behavior of a platinum...

the platinum electrode is determined by $\pi = A - B \log a_{O^{2-}} + B' \log p'_{O_2}$.

There are 3 figures and 6 references: 3 Soviet-bloc and 3 non Soviet-bloc. The most recent references to English-language publications read as follows: Ref. 2: S. N. Flengas et. al.: Canad. J. Chem. 35, 1254, 1957, Ref. 5: R. K. Edwards et. al.: J. Phys. Chem., 61, 255, 1957.

ASSOCIATION: Khar'kovskiy inzhenerno-ekonomicheskiy institut
(Khar'kov Engineering and Economical Institute)

SUBMITTED: September 5, 1959

Card 3/3

MINENKO, V.I.; IVANOVA, N.S.

Thermodynamic properties of molten lead silicates. Izv. vys. ucheb. zav.; tsvet. met. 6 no.3:64-69 '63. (MIRA 16:9)

1. Khar'kovskiy inzhenerno-ekonomicheskiy institut, kafedra khimii.
(Lead silicates—Thermodynamic properties)

L 1590-66 EWP(e)/EPA(s)-2/EWT(m)/EWP(i)/ETC/EWG(m)/EPA(w)-2/T/EWP(b) DS/WH

ACCESSION NR: AP5020954 UR/0073/65/031/008/0804/0810

AUTHOR: Minenko, V. I.; Ivanova, N. S.; Fal'ko, I. K.

TITLE: Electrode functions of some oxide refractories

SOURCE: Ukrainskiy khimicheskiy zhurnal, v. 31, no. 8, 1965, 804-810

TOPIC TAGS: electrode, electrode potential, refractory oxide, magnesium oxide, zirconium compound

ABSTRACT: These materials can be utilized for membranes to be used as electrode with cathode or anode functions, similar to glass electrodes. The work deals with the study of the potential (EMF) of such membranes as a function of electrolyte composition and the possibility for using them in chemical or concentration cells as membranes having the function of a metallic electrode. Galvanic cells of the following types were studied:

PT, O_2/melt I/R_nO_m/ melt II/O_2, Pt (A)
Me/ melt/ $O_2(P_{O_2}$ = 1 amp), Pt, (B)
Me/ melt II/ R_nO_m/ melt I/Me, (C)

Card 1/3

ACCESSION NR: AP5020954

0

Me, [O] = a/R_nO_m/Me, [O] = x (D)

Me/R_nO_m/ melt/O_2(P_{O2} = 1 amp), Pt (E)

where R_nO_m was made of MgO (addition 5-8% MgO. Al_2O_3), zirconium (addition 8-10% CaO), or aluminum (corundum). The additions were to serve as binders to increase the amount of ion-oxygen vacancies in the lattice and decrease the share of electron conductivity. Lead or other silicates were used as electrolytes. EMF was measured at 1213, 1273, 1373 and 1473 K, and stable EMF values were usually obtained after 20-30 minutes. Formulas are given for determining the function φ_n for such electrodes, and their applicability to the various cell systems is discussed. The metallic function of oxide refractories may be represented as a result not only of the activity of oxygen ions but also of cations. Cell E was the ideal type. Measurement data and calculations agreed satisfactorily and point toward the possibility of using magnesium and zirconium oxide membranes that separate the metal from the electrolyte as electrodes with metallic function, that is, their potential is determined by the ion activity of the given metal in the electrolyte. Orig. art. has: 6 formulas and 3 tables.

L 1590-66

ACCESSION NR: AP5020954

ASSOCIATION: Khar'kovskiy inzhenerno-ekonomicheskiy institut (Khar'kov Institute of Engineering Economics)

SUBMITTED: 03Mar64 ENCL: 00 SUB CODE: MM, GC

NR REF SOV: 014 OTHER: 009

Card 3/3

TURKEL'TAUB, N.M.; IVANOVA, N.T.

Chromatographic analysis of C_3 monochloro derivatives. Plast.-massy no.8:55-59 '62. (MIRA 15:7)
(Chlorine compounds) (Chromatographic analysis)

1. IVANOVA, N. T.

2. SSSR (600)

4. Veseloye Reservoir-Herring

7. Appearance of herring (Caspiolosa Kessleri pontica Eichwald) in the Veseloye Reservoir.
Ryb. khoz. 28 No. 11, 1952

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

1. IVANOVA, N. T.

2. USSR (600)

4. Veseloye Reservoir

7. Black Sea herring in the Veseloye Reservoir. Priroda 42, No. 4, 1953.

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

IVANOVA, N.T.

Crucian carp. Priroda 42 no.9:95-96 S '53. (MLRA 6:8)

1. Nauchno-issledovatel'skiy biologicheskiy institut pri Rostovskom gosudarstvennom universitete imeni V.M.Molotova. (Carp)

[illegible], V. T.

"The Biology of Silver Carp of the Veselov Reservoir," Cand Biol Sci, Gorkiy U, Rostov-na-Donu, 1954. (RZhBiol, No 1, Jan 55)

Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (13) SO: Sum. 508, 29 Jul 55

IVANOVA, N.T., kand.biologicheskikh nauk

Keeping migratory fish in an aquarium. Biol. v shkole no.5:67-68 S-O '62. (MIRA 16:2)

1. Rostovskiy pedagogicheskiy institut.
(Fish culture--Study and teaching)

IVANOVA, N.T.; PALAMARCHUK, N.A.; STAVISSKIY, S.V.

Gas chromatographic determination of impurities in methyl chloride. Zav. lab. 31 no.4:463-467 '65. (MIRA 18:6)

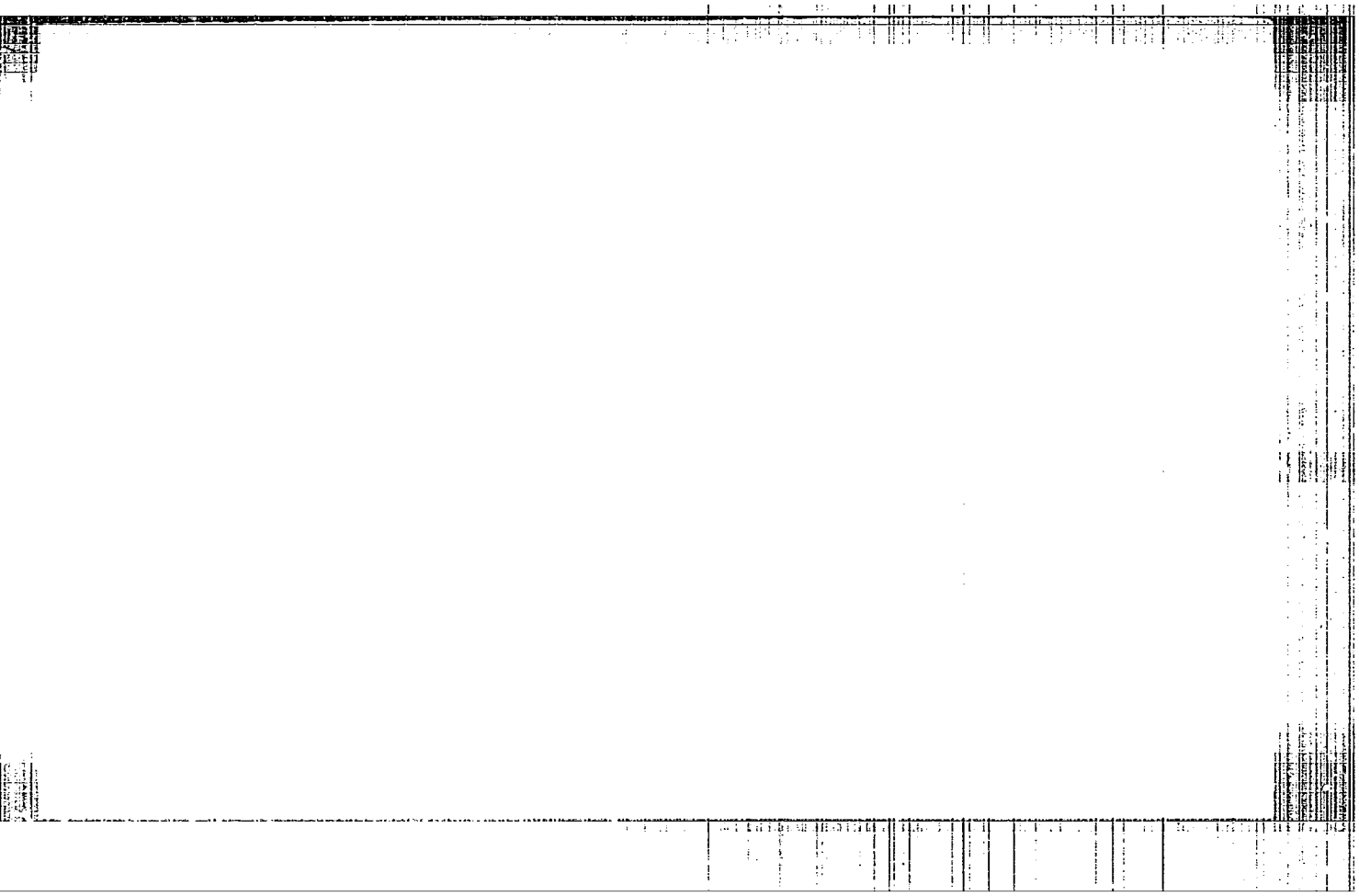
SUKHORUKOV, O.A.; IVANOVA, N.T.

Use of a flame-ionization detector for determining carbon in metals.
Zav. lab. 31 no.9:1070 '65. (MIRA 18:10)

1. Moskovskiy institut stali i splavov.

DVUZHIL'NAYA, M.M.; IVANOVA, N.V.; LIFSHITS, M.M.; MINENKO, O.A.; ZIKEYEV, T.A., redaktor; ALADOVA, Y.I., tekhnicheskiy redaktor

[Accelerated method of analyzing coal] Uskorennye metody analiza uglia. Moskva, Ugletekhizdat, 1954. 58 p. (MLRA 8:7)
(Coal--Analysis)



IVANOVA, N.V.

Fauna of Paleozoic coal-bearing sediments in the Belogerka deposit of Krasnoyarsk Territory. Biul.MOIP.Otd.geol. 38 no.2:130-45 Mr-Ap '63. (MIRA 16:5)

(Krasnoyarsk Territory--Paleontology, Stratigraphic)

POPOVA, M.M.; IVANOVA, M.V.

Color etching of nickel alloys in a thiourea solution. Zav.lab. 26 no.2:186-187 '60. (MIRA 13:5)
(Nickel alloys) (Etching)

S/563/62/000/219/001/002
E111/E483

AUTHORS: Ivanova, N.V., Lebedev, T.A.

TITLE: On the problem of the nature of phase transformations in metals and alloys

SOURCE: Leningrad. Politekhnicheskiy institut. Trudy. no.219. Moscow, 1962. Mashinostroyeniye, 108-114

TEXT: Although the ability to undergo allotropic transformations is generally regarded as an inherent property of certain metals, it has been implied by some workers that transformations of this type cannot occur in absolutely pure metals. Based on theoretical considerations and critical examination of established facts the following postulates are formulated:
1) Any phase transformation associated with a change in the crystal lattice of a metal takes place in a step-like fashion, one microvolume embracing a definite region of the crystal lattice being transformed at a time. 2) An isothermal transformation takes place under the action of foreign atoms diffusing into the original lattice, the formation of a saturated solid solution being a necessary condition for the onset of the transformation.
Card 1/2

3) A phase transformation which takes place within a temperature interval is, as a rule, associated with a change in the concentration of one of the phases present in the alloy; as a result, in this case, the transformation also takes place under the influence of foreign atoms diffusing from one phase to another.
4) Allotropic transformations must be regarded as ordinary phase transformations caused by small quantities of very active impurities present in the phase which is stable at low temperatures. There are 7 figures and 1 table.

Card 2/2

IVANOVA, N.V.

20-5-35/60

AUTHOR ARVAN, Kh.L., IVANOVA, N.V.,

TITLE Absorption Spectra of Certain Dyes in Mixed Solvents. (O spektrakh pogloshcheniya nekotorykh krasiteley v smeshannykh rastvoritelyakh -Russian)

PERIODICAL Doklady Akademii Nauk SSR, 1957, Vol 114, Nr 5, pp 1043-1045 (U.S.S.R.)

ABSTRACT It was reported earlier that in the case of some dyes in mixed solvents (water-organic medium) a shift of the absorption band toward the long waves in relation to its position in each of the pure solvents was observed. It was not possible to bring this shift into connection with a change in the physical-chemical properties of the solvent (viscosity, index of refraction, dipolemoment, volume, etc.) resulting from a change in its composition. Therefore, the assumption of a mixed solvation of the dyes in such solutions was expressed. The quantity of the relative shift of the band is determined by the composition of the solvent and by the properties of the dissolved dye. The association capacity of the dye in aqueous solutions proved to be of essential importance. At a first approach one can describe this properly as value f - the ratio of the maximum of the long-wave to the maximum of the short-wave absorption band which are ascribed to the monomers and the dimers. The dependence of the value of this ratio on the concentration of the dye determines a larger or smaller association tendency of the dye in an aqueous solution. In this connection the steepness of the curve f shall be considered as well as that dye concentration at which the deviation of the curve from the

Card 1/3

Absorption Spectra of Certain Dyes in Mixed Solvents.

tion band in mixtures (fig.3)does not agree with the position in pure solvents with the corresponding dielectric constants.More than that,the spectrum shift on a change in the composition of the solvent is diametrically opposed to that which is observed on the occasion of an analogous change of the dielectric constant on replacement of a solvent by another.A special investigation disclosed that the relative shift of the absorption band is independent of the dye concentration. i.e. of its dispersion.
(3 fig., 2 Slavic references).

ASSOCIATION Not Given.
PRESENTED BY TERENIN A.N., Member of the Academy
SUBMITTED 21,12,1956
AVAILABLE Library of Congress.
Card 3/3

S/076/61/035/001/001/022
B004/B060

AUTHORS: Kharkharov, A. A. and Ivanova, N. V. (Leningrad)

TITLE: Dyeing of synthetic fibers. Spectroscopic study of the character of interaction of simplest amino azo dyes with polyamide fibers

PERIODICAL: Zhurnal fizicheskoy khimii, v. 35, no. 1, 1961, 15 - 19

TEXT: The authors were concerned with the problem of the fast dyeing of polyamide fibers. For this purpose they studied the interaction between simple amino azo dyes and polyamide fibers (caprone). Spectra of dyes dissolved in organic solvents were compared with the spectrum of the diffuse reflection of the dye adsorbed on the fiber. The СФ-4 (SF-4) spectrograph used for the purpose featured an attachment for diffuse reflection, as designed by A. S. Toporets. In accordance with Refs. 2,3, the equation $(1 - R_1)^2/2R_1 - (1 - R_2)^2/2R_2 = kc/S$ was applied to determine the absorption spectra on the basis of the spectra of diffuse reflection. R_1, R_2 are the reflection coefficients of the

Card 1/4

Dyeing of synthetic fibers. ...

dyed and of the undyed tissue, respectively; k is the molecular coefficient of absorption; c is the concentration of the dye upon the fiber; S is the dispersion coefficient. The dyes concerned are tabulated along with their absorption maxima in the solution and on the fiber. All of the dyes displayed a bathochromic shift of the maximum by 20 mμ on the fiber compared with the maximum in solution. Since, however, the character of the spectral curve did not change, it was inferred that no salt formed from a fiber/dye reaction. This was confirmed by the ready washability of the dye with anhydrous solvents. The spectral curves of the extracted dyes were not found to change. A study of the absorption spectra of solutions containing acids and amino azo dyes in equimolecular amounts confirmed that salt is formed only if there is an excess of strong acids. The proton then adds to the azo group. A bathochromic shift by 100-110 mμ takes place. The measurement of the absorption spectrum of p-dimethyl amino azo benzene applied to caprone, terylene, natural silk, and acetate silk yielded spectral curves coinciding with the absorption maximum at 426 mμ. This again led to the conclusion that no salt was formed. The dyes that were examined were bound to the fiber by sorption forces only. The coincidence of the absorption spectrum of p-dimethyl amino azo