

LOZHKIN, A.V.

New palynologic data on the development of vegetation of the
northeastern U.S.S.R. in the Quaternary. Dokl. AN SSSR 152
no.4:949-952 0 '63. (MIRA 16:11)

1. Severo-vostochnyy kompleksnyy nauchno-issledovatel'skiy
institut Sibirskogo otdeleniya AN SSSR. Predstavleno akademikom
V.N. Sukachevym.

LOZHKIN, B. G.

Lozhkin, B. G.

"Investigation of the Efficiency of Form of Steel Profiles." Min Higher Education USSR. Moscow Order of Labor Red Banner Construction Engineering Inst imeni V. V. Kuybyshev. Moscow, 1955 (Dissertation for the degree of Candidate in Technical Science)

SO: Knizhnaya letopis' No. 27, 2 July 1955

SOV/137-57-10-19095

Translation from: Referativnyy zhurnal, Metallurgiya, 1957, Nr 10, p 96 (USSR)

AUTHOR: Lozhkin, B.G.

TITLE: Theoretical Foundations of the Planning of General-purpose Shape Inventories (Teoreticheskiye osnovy postroyeniya sortamentov fasnnykh profiley obshchego naznacheniya)

PERIODICAL: V sb.: Ratsionalizatsiya profiley prokata. Moscow, Profizdat, 1956, pp 11-20

ABSTRACT: An analysis of the cross-sectional shape of general-purpose sections (S) shows that the main line of improvement in the rolling industry should be toward the greatest possible reduction in unit thickness of S within the limits permissible by strength considerations. The maximum possibilities for saving steel in elements subject to bending and compression consists in the use of thin-walled cylindrical (or virtually cylindrical closed-section) and wide-flanged I S. Angle S are the least rational and offer no significant possibilities for improvement. By eliminating clearly irrational S and increasing the number of S in actual use to the most profitable number possible, a steel saving of 2.3-3.2% is possible. In compiling new

Card 1/2

SOV/137-57-10-19095

Theoretical Foundations of the Planning (cont.)

standards for rolled steel it is mandatory to take into consideration the desirability of including mass-production S and wide-flanged compression and bending I-beams to be rolled on special mills, as the excess use of metal is small in that case and is economically entirely justified.

V.D.

Card 2/2

SOV/137-57-10-19094

Translation from: Referativnyy zhurnal, Metallurgiya, 1957, Nr 10, p 96 (USSR)

AUTHOR: Lozhkin, B.G.

TITLE: ~~Fundamental~~ Requirements for Improvement of the Inventory of Rolled General-purpose and Structural Shapes (Osnovnyye trebovaniya po uluchsheniyu sortamenta fasonnoy prokatnoy stali obshchego naznacheniya i fasonnoy stali dlya stroitel'stva)

PERIODICAL: V sb.: Ratsionalizatsiya profiley prokata. Moscow, Profizdat, 1956, pp 87-101

ABSTRACT: A progressive trend in the development of the inventory of shapes is the production of thin-webbed wide-flanged I-beams, tubing, and special shapes, which require large-scale production of general-purpose sheet and strip steel. It is necessary to arrange the production in the USSR, on new equipment, of rational types of sections: Wide-flanged and lightened I-beams, also large welded I-beams on special I-beam welding mills (M), which should be designed with an eye to the new specifications. Tubing for metal structures may be produced more cheaply on extremely simple tube-welding M and possibly on spiral-welding rigs. A demand is put forth for the need for a fundamental

Card 1/2

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Fundamental Requirements for Improvement of the Inventory (cont.)

reworking and improvement of the inventory of sections rolled on the present M. The following are put forth as organizational measures that it would be reasonable to take: Conversion to payment for all sections on the basis of their theoretical weight, reduction in extra payments for adherence to size, and the setting up of a fund for orders for experimental lots of new sections, etc.

V.D.

Card 2/2

137-58-1-657

LOZHKIN, B. G.

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 1, p 102 (USSR)

AUTHOR: Lozhkin, B. G.

TITLE: An Answer to N. B. Lyalin and V. A. Remov (Otvét N. B. Lyalinu i V. A. Removu)

PERIODICAL: V sb.: Ratsionalizatsiya profiley prokata. Moscow, Profizdat, 1956, pp 386-389

ABSTRACT: The author opposes the views expressed by N. B. Lyalin because: a) the unit thickness of the thinnest angles and H-beam walls adopted in the latest assortments satisfies a wide range of application of these sections under conditions of compression and flexure; b) doubts as to the stability of the walls of the proposed beams are ill-founded; c) beams not in large-scale use should be made by welding one at a time; d) the conclusions as to the complications that will result in warehousing are based on a misunderstanding. In the opinion of the author, Comrade Lyalin ignores foreign experience and is skeptical about progressive proposals to improve stock sizes. The author expresses categorical opposition to complete replacement of cheap hot-rolled shapes by bent or welded sheet-steel sections.

Card 1/2

137-58-1-657

An Answer to N. B. Lyalin and V. A. Remov

See RzhMet, 1957, Nr 10, 19189, 18528.

V.D.

1. Beams--Construction 2. Beams--Design

Card 2/2

LOZHKIN, B.G. (Moskva)

Analysis of the efficient use of rolled section steel. Izv.AN SSSR.
Otd.tekh.nauk no.1:137-149 Ja '56. (MLRA 9:5)
(Steel bars) (Girders)

LOZHKIN, B.G., kandidat tekhnicheskikh nauk.

I-beams and girders. Standartizatsiia no.6:29-33 N-D '56.

(MIRA 10:1)

1. Tsentral'naya nauchno-issledovatel'skaya laboratoriya stal'nykh sooruzheniy Gosudarstvennogo politekhnicheskogo instituta Proyektstal'-konstruktsii.

(Girders--Standards)

LOZHKIN, B.G.

AUTHOR: Lozhkin, B.G., Candidate of Technical Sciences 28-58-1-2/34

TITLE: Unification Principles for General Use Steel Assortments
(Printsiy unifikatsii sortamentov stali obshchego naznache-
niya)

PERIODICAL: Standartizatsiya, 1958, # 1, pp 7-11 (USSR)

ABSTRACT: General unification principles for general-use steel standards of Communist bloc countries are given. All involved factors which have to be considered in this unification, the purpose of which is interchangeability of rolled profile and sheet steel, are analyzed. Included are three equations for the statistical evaluation of the practicability (so far as steel consumption is concerned) of profile-working under bending stress (by the specific resistance moment), of profile-working under compression stress (by the specific inertia radius), and for determining economically the most practical quantity of different profiles in any rolled steel assortment. These profiles are not the same in each country, on account of different technical and consumption conditions. Preference number series Ra40 and Ra20 are recommended for profile assortments, with deviations when necessary to meet national production conditions.

~~08-23-80~~
Razan: G.P.I. Proyektal' konstruktorya

LOZHKIN, B.G.; RAKOVSHCHIK, Yu.A.

Design of a new assortment of rolled I-beams and girders with
free and constrained torsion. Prom.stroi. 40 no.4:49-51 '62.
(MIRA 15:5)

1. Tsentral'nyy nauchno-issledovatel'skiy i proyektno-eksperi-
mental'nyy institut promyshlennykh zdaniy i sooruzheniy Akademii
stroitel'stva i arkhitektury SSSR.
(Beams and girders) (Torsion)

BERDICHEVSKIY, M.M., inzh.; LOZHKIN, B.G., kand.tekhn.nauk;
RAKOVSHCHIK, Yu.A., kand.tekhn.nauk

Strut-system crane gantries for buildings with a large
network of columns. Prom. stroi. 40 no.12:28-32 '62.
(MIRA 15:12)

1. Tsentral'nyy nauchno-issledovatel'skiy i
proyektno-eksperimental'nyy institut promyshlennykh
zdaniy i sooruzheniy Akademii stroitel'stva i arkhitektury
SSSR.

(Cranes, derricks, etc.)
(Industrial buildings—Equipment and supplies)

UDOVICHENKO, Yu.N., inzh.; ILETSKIY, N.N., inzh.; LOZHKIN, G.S., inzh.

Improving plastic properties of 35KhML steel. Mashinostroenie no.1
62-63 Ja-F '64. (MIRA 17:7)

LOZHKIN, I.

At the Lvov Airport. Grazhd. av. 16 no.1:5 Ja '59. (MIRA 12:3)
(Lvov--Airports)

LOZHKIN L.

LOZHKIN L.

KARGIN, V.A.
5(3) p4 PHASE I BOOK EXPLOITATION 307/1589

Academiya nauk SSSR.
Knizya bol'shich molalul; sbornik statey (Chemistry of Large Molecules; Collection of Articles) Moscow, Izd-vo AN SSSR, 1958. 299 p. (Series: Akademiya nauk SSSR. Nauchno-populyarnaya seriya) 30,000 copies printed.

Compiler: G.Y. Sklovskiy; Resp. Ed.: A.V. Topchiyev, Academician; Ed. of Publishing House: V.A. Boyarskiy; Tech. Ed.: I.M. Gusva.

PURPOSE: This book is intended for a wide circle of readers including those who have had no training in chemistry. It can also serve as a manual for propagandists, teachers, and journalists.

Card 1/8

Chemistry of Large Molecules (Cont.) 307/1589

COMMENT: This collection of articles reflects the trend for the future development of the Soviet chemical industry as indicated by the May plenary session of the Central Committee of the Communist Party within the framework of the new Seven Year Plan. These articles were published in newspapers and journals. The authors, scientists and industry workers, developed the theme of accelerated development of the chemical industries, and sciences, with stress on the manufacture of synthetic fibers, plastics, and other materials. Some of the articles were abridged, revised, or enlarged. The articles were selected so as to give an adequate survey of the chemistry and technology of high-molecular-weight compounds and their use in industry, agriculture, and in the manufacture of consumer goods. Much of the material is in the form of production series of the Academy of Sciences. Similar volumes are intended for future publication. No references are given.

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Card 5/8		

Effect of current density, of the distance between the electrodes, and of the temperature on the current efficiency in the electrolysis of fused zinc chloride. G. A. Abramov and L. N. Loshkin. *Trans. Leningrad Ind. Inst., Ser. Met.* 1940, No. 4, 36-40 (German summary).— ZnCl₂ was dehydrated by soln. in HCl (d. 1.19), at 10 g. ZnCl₂ in 10 cc., and heating in a stream of HCl, at about 400-450°. On electrolysis in porcelain beakers 5.4 cm. in diam. and 9 cm. high, with molten Zn at the bottom of the beaker as cathode and a carbon rod above as anode, at 600° and c.d. of 0.5 amp./sq. cm. down to 0.03 sq. cm., the current efficiency η at the cathode increases with the distance a between the electrodes. At a const. distance a , η decreases with decreasing c.d. With rising temp., η falls at any c.d. and with any a . The variation of η with the c.d. is easily explained by the constancy of the losses in metal at any c.d. Increased distance between the electrodes tends to reduce losses by diffusion and convection. Raised temp. results in higher vol. of the metal in the fused salt and promotes convection and diffusion, hence results in higher losses and lower η . Since in V-shaped tubes the losses are lower than in the vertical beaker, the somewhat higher current efficiencies found by Lorenz are natural. In Abramov's formula $\eta = k/D^a$, where D = c.d. in amp./sq. cm., a = distance between electrodes in cm., the temp.-dependent const. k is found, from both Lorenz' and the authors' data, as 0.97, 0.92, 0.87, 0.85, 0.80, and 0.44 at 500°, 600°, 650°, 680°, 700°, and 735°, resp. The numerical values of k are of course different if the actual total current intensity is used instead of the c.d. D per sq. cm.; however, the two curves of k in terms of temp. intersect at 370° and at 735°, the first corresponding to the m.p., the second to the b.p. of ZnCl₂. Generally, $k = [(h - t)/(h - t_m)]^n$, where h is the boiling temp., t_m the melting temp. of the salt, t the temp. of the electrolysis, n an exponent specific for the given salt and possibly also dependent on the geometrical conditions of the electrolysis. For ZnCl₂, from both Lorenz' and the authors' data, $n = 0.1$; for PbCl₂, from Lorenz' expts., $n = 2$; from data of Abramov and Perlov, $n = 0.7$; for PbBr₂, from Lorenz' measurements, $n = 1.7$; for SnCl₄ (Lorenz) $n = 0.25$. Anodic current efficiencies measured at 600° with $a = 2$ cm., at varying c.d. of from 0.50 down to 0.05 amp./sq. cm., are practically identical with the cathodic η observed under the same conditions. This proves that the main source of losses in the electrolysis of fused salts is reformation of salt from the metal and the halogen.

N. Thom

4

Effect of the current density, of the distance between the electrodes, and of temperature on the polarization voltage in the electrolysis of fused zinc chloride. G. A. Albramov and V. N. Likhin. *Trans. Leningrad Inst. Inst., Ser. Mat.* 1940, No. 4, 47-51 (German summary).—Counter e.m.f. after electrolysis of $ZnCl_2$ were measured in a setup involving 2 carbon anodes and 2 zinc cathodes and a revolving commutator (cf. 3rd preceding abstr.). After dehydrating the $ZnCl_2$ and after preliminary electrolysis for 2 hrs. to eliminate last traces of moisture, expts. were made. The e.d.s. are those obtained with the revolving commutator. At 550° , with a distance between the main electrodes $s = 1$ cm., for cell I, e.m.f. E const. 1.615 v., as compared with 1.573 v. or 1.617 v. given by other authors for the e.m.f. of $Zn|ZnCl_2|C$; cell II (+) A_m/K_m (-), e.m.f. E increasing from 1.540 v. to 1.600 v. for e.d. decreasing from 0.93 to 0.031 amp./sq. cm., as postulated by Lorenz' law $R = r_0$, where r_0 = current efficiency and $s =$ decompn. voltage; cell III const. 1.630 v.; cell IV const. 0.025 v., in agreement with the difference $E_{II} - E_I = 0.024$ v.; cell V, E rising from 1.512 v. to 1.640 v. for e.d. decreasing from 0.031 to 0.031 amp./sq. cm.; cell VI, E falling from 0.107 v. to 0.031 v. with e.d. decreasing between the same limits, in agreement with the values of the difference $E_I - E_V$. The metal dissolved in the fused salt has, just as in the case of $PbCl_2$, a depolarizing effect on both cathode and anode; the potential of K_m becomes more negative than that of A_m and does not vary with the e.d., the potential of A_m becomes more negative than A_0 but does depend on the e.d., becoming more positive with decreasing e.d.; it varies from -0.11 v. at 1 amp./sq. cm. to -0.04 v. at 0.031 amp./sq. cm., at 550° and $s = 1$ cm. It is assumed that Zn metal dissolving in fused $ZnCl_2$ forms subchlorides such as $ZnCl$; the concn. in Zn^+ ions around K_m is smaller than at A_m ; from the observed e.m.f. the ratio of the two concns. is 1.42 (at 550°).

The electrochem. processes at K_m and A_m are, resp., $Zn - e = Zn^+$ and $Zn^+ + e = Zn$ (where $e =$ electron). At A_m , the electrochem. reaction $Zn^+ - e = Zn^{2+}$ takes place along with the regular discharge of Cl^- anions. The expectation that with diminishing e.d. the potential of A_m would fall was not confirmed by expt.; this disagreement is only found with $ZnCl_2$, not with $PbCl_2$. This difference in behavior of the 2 salts is ascribed to the higher viscosity and lower elec. cond. of fused $ZnCl_2$ owing to which concentration currents at low e.d. at the anode are slowed down considerably with decreased concn. in Zn^+ ions. With rising temp., the divergence of the potential of K_m and A_m , relative to K_0 and A_0 , increases. The curves extrapolated backwards intersect (potential 0 v.) at about 375° .
N. Thom

ABRAMOV, G.A.; VETYUKOV, M.M.; GUPALO, I.P.; KOSTYUKOV, A.A.; LOZHKIN, L.N.

[Theoretical principles of aluminum electrometallurgy] Teoreticheskie osnovy elektrometallurgii aliuminia. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po chernoj i tsvetnoi metallurgii, 1953. 583 p. (MLBA 6:12)
(Aluminum--Electrometallurgy)

LOZHNIN, L.N.
AGEYEV, P.Ya.; ALABYSHEV, A.F.; BAYMAKOV, Yu.V.; BELYAYEV, A.I.; BATASHEV, K.P.;
BUGAROV, L.A.; VASIL'YEV, Z.V.; GUPALO, I.P.; GUS'KOV, V.M.; ZHURIN, A.I.;
VETUYUKOV, M.M.; KOSTYUKOV, A.A.; LOZHKIN, L.N.; OL'KHOV, N.P.;
OSIPOVA, T.V.; PERTSEV, I.I.; RUMYANTSEV, M.V.; STRELETS, Ye.L.;
FIRANOVA, L.A.; CHUPRAKOV, V.Ya.

Georgii Alekseevich Abramov. TSvet.met. 27 no.2:72-73 Mr-Ap '54 (MLRA 10:10)
(Abramov, Georgii Alekseevich, 1906-1953)

137-58-6-11493

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 6, p 34 (USSR)

AUTHORS: Lozhkin, L.N., Gerasimenko, L.N.

TITLE: An Investigation of the Lead Oxide - Lead Silicate System by Measurement of the emf (Issledovaniye sistemy zakis' svintsa-silikat svintsa metodom izmereniya e d. s.)

PERIODICAL: Tr. Leningr. politekhn. in-ta, 1957, Nr 188, pp 110-114

ABSTRACT: An electrochemical method - measurement of the emf of concentration circuits - is used to shed light on the question of the chemical compounds present in the system $PbO-SiO_2$. The experiments were performed in corundum crucibles at $\sim 970^\circ C$. The reliability of the method was checked against systems previously investigated: $AgNO_3-NaNO_3$ and $CuCl-KCl$. The electrodes in this system were of Pb, and the power leads of W. The emf of the circuit varied from 0 to 340 mv as the composition of the alloy studied varied from $PbSiO_3$ to PbO . The emf isotherm presents a point of inflection above the compound Pb_2SiO_4 , which testifies to its presence in the melt.

Card 1/1

1. Lead oxide-lead silicate systems--Electrochemistry Yu.N.
2. Lead oxide-lead silicate systems--Electrical properties
3. Voltage--Measurement

Investigation of the system germanium-sulfur and germanium-selenium.
A. S. Pashinkin, Lyu-Tsun'-Khua, A. V. Novoselova (10 minutes).

(Not presented).]

Thermodynamic investigation of alloys of the system gallium-antimony.
L. N. Gerasimenko, N. A. Goryunova, I. V. Kirichenko, L. N. Lozhkin,
A. G. Morachevskiy (10 minutes).

Report presented at the 3rd National Conference on Semiconductor Compounds,
Kishinev, 16-21 Sept 1963

LOZHKIN, L.N.; RUMYANTSEV, V.P.

Effect of the composition of carbon anodes on their specific
electric resistance. Trudy LPI no.223:43-48 '63.

(MIRA 17:11)

LOZHKIN, L.N.; SHEVLYAKOV, V.P.

Effect of graphite additions on the specific electric resistance
of carbon electrodes. Trudy LPI no.223:49-54 '63. (MIRA 17:11)

"APPROVED FOR RELEASE: 08/23/2000

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L 29241-66 EWI(m)/EWP(t)/ETI IJP(c) WW/JW/JD/JG

ACC NR: AP6019357

SOURCE CODE: UR/0149/66/000/001/0046/0048

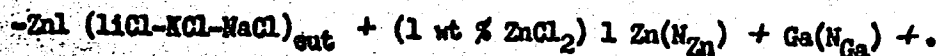
AUTHOR: Gerasimenko, L. N.; Zaytsev, V. A.; Lozhkin, L. N.; Morachevskiy, A. G. ⁵⁶_B

ORG: Department of Theoretical Fundamentals of Metallurgy, Leningrad Polytechnic Institute (Kafedra teoreticheskikh osnov metallurgii, Leningradskiy politekhnicheskii institut)

TITLE: Thermodynamic properties of liquid alloys in the zinc-gallium systemSOURCE: IVUZ. Tsvetnaya metallurgiya, no. 1, 1966, 46-48 ²⁷ ²⁷

TOPIC TAGS: liquid metal, zinc alloy, gallium alloy, thermodynamics

ABSTRACT: The thermodynamic properties of the liquid alloys of the zinc-gallium system was studied by measuring the electromotive forces (emf) of the concentration bonds:



The emf was measured in the 450-550° range in many compositions ($N_{\text{Zn}} = 0.1 - 0.9$). The emf values served to determine the partial molar thermodynamic characteristics of zinc. The corresponding integral values for the Zn-Ga system were calculated with the Gibbs-Duhem equation.

Card 1/2

UDC: 669.55+669.87

L 29241-66

ACC NR: AP6019357

Times of the individual tests amounted to 22-24 hours. In the Zn-rich system ($N_{Zn} > 0.6$) the emf was reproduced with an accuracy of plus or minus 0.2 mV at a given temperature. Increased Ga content in the alloys lower the relative error value in determining emf value. Results of emf measurements and the calculated thermodynamic characteristics of the system are presented. Calculated values of heat of mixing are in satisfactory agreement with data derived from direct calorimetric measurements. Orig. art. has: 3 figures and 1 table. [JPRS]

SUB CODE: 11, 20 / SUBM DATE: 14Jul64 / ORIG REF: 001 / OTH REF: 003

Card 2/2 CC

L 40234-66 EWT(m)/EWP(w)/T/EWP(t)/ETI IJP(c) JD/WH/JG
ACC NR: AP6019640 SOURCE CODE: UR/0149/66/000/003/0043/0045

AUTHOR: Gerasimenko, L. N.; Zaytsev, V. A.; Lozhkin, L. N.; Morachevskiy, A. G. ⁶⁷ B

ORG: Department of Theoretical Principles of Metallurgy, Leningrad Polytechnic Institute (Leningradskiy politekhnicheskii institut. Kafedra teoreticheskikh osnov metallurgii)

TITLE: Thermodynamic properties of liquid alloys of the zinc-antimony system
₁₆ ₂₇ ₂₇

SOURCE: IVUZ. Tsvetnaya metallurgiya, no. 3, 1966, 43-45

TOPIC TAGS: zinc alloy, antimony alloy, alloy system, thermodynamic property, liquid metal

ABSTRACT: The thermodynamic properties of liquid alloys of the Zn-Sb system were investigated by the electromotive force (emf) method. Measurements were made in the temperature range 600-750C with N_{Zn} ranging from 0.1 to 0.9. From the emf values the partial molar thermodynamic characteristics of zinc were determined and the integral values of the change of the thermal potential, enthalpy, and entropy, upon the formation of one gram-atom of alloy from pure components in a liquid state were calculated by the Gibbs-Duhem equation. The investigation revealed that a complex S-shaped dependence of the excess partial entropy of zinc on the composition, which is characteristic for systems with a strong inner action between components in a liquid state, is observed for the system Zn-Sb and that the ZnSb com-

Card 1/2

UDC: 669.5 + 669.75

L 40234-66

ACC NR: AP6019640

pounds are stable in a molten state. Orig. art. has: 1 table and 3 figures.

SUB CODE: 11/ SUBM DATE: 15Dec64/ ORIG REF: 008/ OTH REF: 006

Card 2/2 *So*

LOZHKINA, L.N.

Some problems in the development of the leading branches of
the food industry in the Altai Territory. Izv. Alt. otd. Geog.
ob-va SSSR no.5:192-194 '65. (MIRA 18:12)

1. Permskiy gosudarstvennyy universitet.

BOGATYREV, Nikolay Yakovlevich; KOSOLAPOV, Igor' Tikhonovich; LOZHKIN, Leonid Vasil'yevich

Methods for determining the wear of electric motor brushes. Izv.vys. ucheb.zav.; elektromekhanika 8 no.6:683-689 '65.

(MIRA 18:8)

1. Nachal'nik otdela Tomskogo filiala Vsesoyuznogo nauchno-issledovatel'skogo instituta elektromekhaniki (for Bogatyrev).
2. Laboratoriya Tomskogo filiala Vsesoyuznogo nauchno-issledovatel'skogo instituta elektromekhaniki (for Kosolapov, Lozhkin).

L 1692-66 EMT(1)/EPA(s)-2

ACCESSION NR: AP5017464

UR/0144/65/000/006/0683/0689/8
621.313.044.62

AUTHOR: Bogatyrev, N. Ya. (Chief of dept); Kosolapov, I. T. (Chief of laboratory);
Lozhkin, L. V. (Chief of laboratory)

TITLE: Methods of determining the wear of electric-machine brushes

SOURCE: IVUZ. Elektromekhanika, no. 6, 1965, 683-689

TOPIC TAGS: electric machine brush

ABSTRACT: Brush-wear-determining methods are subdivided into two groups: (1) Those requiring the machine shutdown and (2) Those permitting continuous wear measurement without the machine shutdown. Based on the Western sources (Engineer, 1961, 212, no. 5520, "Carbon Brush Conference"), a brief review of the methods is offered. Two methods of the second group -- induction-sensor and strainometer-- are considered in some detail. Wire-type strainometers with a 20-cm base and 200-ohm resistance were used in studying the wear of 6 brushes simultaneously. A wear-time experimental curve for a G-2 carbon brush is shown. It is believed that strainometers can operate at frequencies up to 50 kc and at temperatures between -100 and +8000. Orig. art. has: 7 figures.

Card 1/2

L 1692-66

ACCESSION NR: AP5017464

ASSOCIATION: Tomskiy filial, Vsesoyuznyy nauchno-issledovatel'skiy institut
elektromekhaniki (Tomsk Branch, All-Union Scientific Research Electromechanical
Institute)

SUBMITTED: 05Aug63

ENCL: 00

SUB CODE: EE

NO REF SOV: 002

OTHER: 001

Card 2/2

NELLIN, V.I., kand. tekhn. nauk; TUKTAYEV, I.I., kand. tekhn. nauk;
LOZHKIN, L.V., inzh.

Effect of external vibrations on the sparking of low power
collector-type machines. Elektrotehnika. 36 no.9:49-53 S '65.
(MIRA 18:9)

LOZHKIN, M.S.

Lowering the cost of operating construction machinery. Gor.khoz.Mosk. 27
no.11:28-29 N '53. (MLBA 6:11)

(Building machinery)

KUDRYAVTSEV, A.A.; LOZHKIN, N.I.

Method of studying olfaction in cows. *Fiziol.zhur.* 42 no.10:916-
918 0 '56. (MIRA 9:12)

1. Otdel fiziologii Vsesoyuznogo Instituta eksperimental'noy veteri-
narii, Moskva.
(SMELL,
investigation in cows (Rus))

USSR / Human and Animal Physiology. Nervous System.

T-10

Abs Jour : Ref Zhur - Biologiya, No 1, 1959, No. 3883

Author : Lozhkin, N. I.

Inst : Moscow Academy of Veterinary Medicine

Title : Conditioned Reflex Activity in Cattle Response to
Smell Stimuli

Orig Pub : Tr. Mosk. vet. akad., 1957, 20, 41-50

Abstract : Formation of motor-defense reactions in response to homo-
genic and compound olfactory stimuli were noted in 6
cows by the 2 - 5th conjunction (the smell stimuli
belong to the physically strong ones). The formed
reflexes became extinct after 21 - 28 non-reinforcements
of the irritant, were re-established on the 1 - 2nd
conjunction, and retained for a lengthy period (3 months).
A differentiation with respect to various odors was
established rapidly. Conversion of a negative to a

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USSR / Human and Animal Physiology. Nervous System.

T-10

Abs Jour : Ref Zhur - Biologiya, No 1, 1959, No. 3883

positive reaction required up to 6 conjunctions, of a positive into a negative, 25 - 37 conjunctions. The physiological state of the animal was reflected in the indices of the higher nervous activity: the latter deteriorated during pregnancy and estrus. -- K. S. Ratner

Card 2/2

100

LOZHKIN, N.I., Cand Bio Sci--(diss) "On the characteristics of
~~the~~ conditioned reflex activity in cattle to olfactory stimulants."
Mos, 1958. 16 pp (All-Union Inst of Experimental Vet^{Sci} ~~VASK~~^h ~~PHIL~~), 120 co-
pies (KL,25-58,110)

- 61 -

LOZHKIN, N.I., kand.biolog.nauk

Obstetrical nose hook. Veterinariia 36 no.10:44-45 0 '59.
(MIRA 13:1)

1. Vsesoyuznyy institut eksperimental'noy veterinarii.
(Veterinary obstetrics)

LOZHKIN, N.I.

Device for working with minute quantities of liquids. Lab. delo
7 no.3:61 Mr '61. (MIRA 14:3)

1. Vsesoyuznyy institut eksperimental'noy veterinarii.
(LABORATORIES—APPARATUS AND SUPPLIES)

LOZHKIN, N. I. and NIKOL'SKIY, B. S. (Candidate of Biological Sciences
and the All-Union Institute of Experimental Veterinary Medicine)

"Graduated test tube for the determination of acidity of milk"

Veterinariya, Vol. 38, no. 7, July 1961, pp. 84

Lozhkin N. I. - Cand Biol Sci

KLESMET, O.I.; VOLIK, F.Ye., veter. vrach; MAKRUSHIN, P.V., kand. veter. nauk; LOZHKIN, N.I., kand. biolog. nauk; NIKOL'SKIY, B.S., nauchnyy sotrudnik

Laboratory practice. Veterinariia 38 no.7:80-84 J1 '61.
(MIRA 16:8)

1. Respublikanskaya veterinarno-bakteriologicheskaya laboratoriya Latvyskoy SSR (for Klesmet). 2. Veterinarno-bakteriologicheskaya laboratoriya, Melitopol' (for Volik). 3. Saratovskiy zooveterinarnyy institut (for Makrushin). 4. Vsesoyuznyy institut eksperimental'noy veterinarii (for Lozhkin, Nikol'skiy).
(Listeriosis) (Aureomycin)
(Milk—Analysis and examination)

VAYNYUNSKIY, S.I.; LOZHKIN, N.Ya.

Let's fulfil the seven-year plan in five years; workers of the Pavlovsk Plant of Silicate Building Materials use all potentialities for increasing production. Stroi.mat. 6 no.1:5-7 Ja '60. (MIRA 13:5)

1. Glavnyy inzhener Pavlovskogo zavoda silikatnykh stroitel'nykh materialov (for Vaynyuskiy). 2. Nachal'nik proizvodstvenno-tekhnicheskogo otdela Pavlovskogo zavoda silikatnykh stroitel'nykh materialov for Lozhkin).
(Pavlovsk (Leningrad Province)--Building materials industry)

ZAYCHENKO, I.Z.; MYSHLEVSKIY, L.M.; ZAYTSEVA, K.V.; KAMENETSKIY,
G.I.; MAZYRIN, I.V. [deceased]; SHCHERBAKOV, V.I.; LOZHKIN, O.V.;
CHIGAREVA, E.I., red.; KOVAL'SKAYA, I.F., tekhn. red.

[Development of the designs of hydraulic and pneumatic equip-
ment and of lubrication and filtration systems for machine tools
abroad] Razvitie konstruktsii gidravlicheskogo i pnevmaticheskogo
oborudovaniia, smazochnykh i fil'truushchikh ustroistv metallo-
rezhushchikh stankov za rubezhom; obzor. Moskva, TSINTIMASH,
1961. 101 p. (MIRA 16:5)

1. Moscow. Eksperimental'nyy nauchno-issledovatel'skiy institut
metallorazreshchikh stankov.
(Machine-tools--Design and construction)

LOZHKIN, O.

~~XXXXXXXXXXXXXXXXXXXX~~

Inside the atom. Tekh.mol.22 no.2:5-10 F '54.

(MLRA 7:2)

1. Nauchnyy sotrudnik Radiyevogo instituta Akademii nauk SSSR.
(Atoms)

LOZHKIN, O. V., OSTROUMOV, V. I. SHANOV, V. F. PERFILOV, N. A. and IVANOVA, N. S.

"Nuclear Fission Reactions With Pions and Fast Protons".

All identified at the Radium Institute, Academy of Sciences USSR

Report appearing in 1st Volume of "Session of The Academy of Sciences USSR on the Peaceful Use of Atomic Energy, 1-5 July 1955", Publishing House of Academy of Sciences USSR, 1955.

SO: Sum 728, 28 Nov 1955.

copy of

IRML

110 Nuclear fission reactions with π mesons and fast protons. S. A. Es'hbar, N. S. Ivanova, G. V. Loshkova, V. I. Osipov, and V. P. Shamov. Zhurnal Fizicheskoy Khimii, S.S.S.R. po Mirovomu Izpol'zovaniyu Atomnoy Energii 1955, Zashchitnyi Otkryt. Khim. Nauk, 70-88. The interaction of slow pions and fast (400-600-m.e.v.) protons with U, Bi, and W was studied by the thick-emulsion photographic-plate method. The results show that the capture of slow pions by U, Bi, and W causes their fission, the probability being $\sim 0.3-0.4$, ~ 0.02 , and ~ 0.002 , resp. The U-fission yields plotted vs. free paths showed a sharp max. indicating that the fission reaction is like that with fast particles. The reaction of U, Bi, and W with fast protons made it possible to determine the excitation energy and to find the distribution of the fission products with respect to the initial excitation energies. The actual fission process at high excitation energies is preceded by the evapn. of neutrons and charged particles.
 J. Roytar Leach

Handwritten initials and a circled number '4'.

LOZHKIN, O.

What we know about neutrino. Tekh.mol. 23 no.1:32-33 Ja'55.
(Particles, Elementary) (MLRA 8:3)

LOZHKIN, O. V.

FD-3217

USSR/Physics, Nuclear Emulsions

Card 1/1 Pub. 153-26/28

Author : Lozhkin O. V.

Title : Improvement of accuracy of observations in nuclear emulsions

Periodical : Zhur. Tekh. Fiz., 25, No 7, 1311-1312, 1955

Abstract : A nuclear plate suspected of some wrong interpretation is soaked around an hour in distilled water. The emulsion swells to 6-7 times its former thickness. After having been dried the emulsion is spread with immersion oil and is studied again. If separate tracks were superimposed, they become distinguishable and stars are less blurred.

Institution: ---

Submitted : March 22, 1955

LOZHKIN, O. V.

200
ON INCREASING THE DEGREE OF ACCURACY IN OBSERVATION IN THE NUCLEAR PHOTOPLATES. O. V. Lozhkin. Zhur. Tekh. Fiz. 25, 1341-42(1955) July. (in Russian)

Discrepancies in the study of nuclear photoplates under microscope due to the large coefficient of contraction in the emulsion layer are eliminated by the simple method which increases discernibility between track intervals by about four times for 3-micron crystals after soaking it in distilled water and drying. (R.V.J.)

NU
PH
RMJ
MTT

FD-2339

USSR/Nuclear Physics - Fission by negative pi-mesons

Card 1/2

Pub. 146 - 4/34

Author : Perfilov, N. A.; Lozhkin, O. V.; and Shamov, V. P.

Title : Yield of the processes of fission and star formation during capture of negative pi-mesons by uranium, bismuth, and wolfram nuclei

Periodical : Zhur. eksp. i teor. fiz. 28, 655-663, Jun 1955

Abstract : By the method of thick-layer photoplates with the substance introduced into the middle layer in the form of compounds insoluble during development and fixing, the authors investigated the interaction of slow negative pi-mesons with U, Bi and W nuclei. For the indicated elements they obtain the ratios of yield by fission and star formation as a result of capture by the nuclei of negative pi-mesons. The probability of fission of nuclei during capture of negative pi-mesons decreases sharply with decrease of Z of the nucleus: for U the fission probability is about 0.3; for Bi, 0.02; for W, less than 0.002 possibly. The remaining cases of interaction of negative pi-mesons with heavy nuclei lead to formation of mainly so-called rayless and single-ray stars. They consider the mechanism of nuclear fission to be possible in the case of capture of negative pi-mesons. Eleven references; e.g.

FD-2339

Card 2/2

N. A. Perfilov, O. V. Lozhkin, V. P. Shamov, N. S. Ivanova, A. V. Pyrkin, Otchet RIAN, 1950, 1952, 1953, 1955.

Institution : Radium Institute, Academy of Sciences USSR (RIAN)

Submitted : March 19, 1955

FD-2353

USSR/Nuclear Physics - Fission of uranium by slow mesons

Card 1/1

Pub. 146 - 18/34

Author : Lozhkin, O. V., and Shamov, V. P.

Title : ~~Probability of fission of uranium nuclei during their absorption~~
of slow negative pi-mesons

Periodical : Zhur. eksp. i teor. fiz. 28, 739-740, Jun 1955

Abstract : A report communicated earlier in Otchet RIAN*, Jan 1954. The authors state that the first determinations of the probability of fission of uranium nuclei during capture of negative pi-mesons, which were carried out in their laboratory in 1951 by Perfilov, Ivanova, and the authors (Otchet RIAN, 1951-1952), by means of the method of thick-layered photoemulsions, led to the conclusion that every or almost every capture of negative pi-meson by uranium nucleus leads to its fission, which conclusion was later made by S. Al-Salam (Phys. Rev. 84, 1951). Using the same method the authors evaluated the probability of fission as 0.18 ± 0.06 , differing from the value in the literature (W. John and W. Fry, Phys. Rev. 91 1953). They thank Professor N. A. Perfilov. 6 ref.

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

Submitted : March 19, 1955

USSR/Nuclear Physics - Fission fragments distribution

FD-2964

Card 1/1 Pub. 146 - 5/28

Author : Lozhkin, O. V.; Perfilov, N. A.; Shamov, V. P.

Title : ~~Problem of the angular distribution of fission fragments~~
Problem of the angular distribution of fragments in the fission of uranium for large energies of excitation

Periodical : Zhur. eksp. i teor. fiz., 29, September 1955, 292-295

Abstract : The authors investigated the cases of the fission of uranium nuclei in the nuclear fine-grain emulsion P-9 saturated with an aqueous solution of a uranium salt and irradiated by protons with energies of 660 Mev. They studied the angular distribution of the fission products (fragments) relative to the direction of the proton beam for energies of excitation of the uranium nucleus equal to approximately 75 Mev, 150 Mev, and 300 Mev. The angular distribution of the fragments can be approximately described by the following function: $a + b \cdot \sin^4 \phi$. The anisotropy increases somewhat with increase of the energy of excitation. Six references: e.g. V. P. Shamov, O V. Lozhkin, Otchet RIAN, 1955.

Institution : Radium Institute, Academy of Sciences USSR

Submitted : May 12, 1955

LOZHKIN, O. V.

USSR/Physics

Card 1/1 Pub. 22 - 16/45

Authors : Shamov, V. P. and Lozhkin, O. V.

Title : Asymmetry of the runs by fragments of the fission of heavy nuclei
 bombarbed with super fast particles

Periodical : Dok. AN SSSR 103/2, page 233, Jul 11, 1955

Abstract : An experimental study of the asymmetry of the runs of nuclear fragments,
 a product of the fission of heavy elements bombarbed with super fast
 particles (protons of 660 Mex.), is described. Emulsions with U, Bi and
 W were studied. One USSR reference (1954).

Institution : The Acad. of So., USSR, Radium Institute imeni V. G. Khlopin

Presented by : Academician A. F. Joffe, May 20, 1955

Loghkin, O.V.

62
499 AEC-tr-2286
THE PROBLEM OF THE ANGULAR DISTRIBUTION OF FISSION FRAGMENTS OF URANIUM AT HIGH ENERGY EXCITATIONS. O. V. Loghkin, N. A. Perillov, and V. P. Shamov. Translated by V. N. Hlmsky-Koreakoff from Doklady Akad. Nauk S.S.S.R. 193, 407(1955). 3p.

The angular distribution of fission fragments of uranium was studied by using thick-layered photographic plates. Nuclear fine-grained emulsions of the type x-9 were saturated in a uranium salt solution and bombarded with 660-Mev protons. In all the observed cases of fission of uranium nuclei the direction of scattering of fragments with respect to the direction of the falling proton and the angle between the fragments were measured (the initial excitation energy of fission nuclei was measured by the angle between the fragments). All the fissions were divided into three groups according to the energy of excitation of the fission nuclei: 60, 150, and 320 Mev. The angular distribution of the fragments of uranium fission as a function of the initial energy of excitation is given. In the case of all the observed fissions the angular distribution can be approximately described by the function $I(\phi) = a + b \sin^2 \phi$, where ϕ is the projected angle between the direction of the divergence of the fragments and the direction of the falling proton.

(2)

Lozhkin O.V.

275 AEC-tr-2304
ON THE YIELD OF FISSION AND STAR FORMATION
AFTER CAPTURE OF π^- MESONS BY THE NUCLEI U, Bi,
AND W. N. A. Porfilov, O. V. Lozhkin, and V. P. Shamov.
Translated by Morton Hamermesh from Doklady Akad. 62
Nauk S.S.S.R. 103, 417-19(1955). 7p.
The ratio of fission and star formation probabilities
after π^- -meson capture by U, Bi, and W was studied by
placing these elements, in the form of fine-grained oxides,
to the central layer of a three-layer nuclear emulsion. The
results of the experiment are tabulated and show the number
of stars per fission for U_2O_3 , Bi_2O_3 , and WO_3 to be 0/2.4,
57, and 133, respectively. (B.J.H.)

(2)

LOZHKIN, O. V. and PERFILOV, N. A.

"Multiple Charge Particles in Fast Proton Induced Fissions in Nuclear Emulsions"
a paper presented at the International Conference on Nuclear Reactions, Amsterdam,
2-7 July 1956.

D551274

Lozhkin, O. V.

49 - Rmz

Asymmetry of the path of fragment obtained from the fission of heavy nuclei by super-high-speed particles. V. P. Shamov and O. V. Lozhkin. Soviet Phys., JETP 2, 111-15 (1956) (English translation). See C.A. 50, 3110a. R. M. R.

2

Rmz

LOZHKIN, O.V.

400-PM

Angular distribution of fragments from the fission of ²³⁵U
uranium for high excitation energies. O. V. Lozhkin, N. A.
Perfilov, and V. P. Shamov. *Soviet Phys. JETP* 24:116-18,
1967 (1966) (Engl. translation).—See *C.A.* 50, 3110b.
R. M. R. pmf

~~LOZHKIN, O.V.~~ LOZHKIN, O.V.

CARD 1 / 2

PA - 1877

SUBJECT USSR / PHYSICS
 AUTHOR LOZHKIN, O.V., PERFILOV, N.A.
 TITLE The Heavy Nuclear Fragments on the Occasion of Spallations which
 are Caused by Fast Protons in a Nuclear Emulsion.
 PERIODICAL Zhurn. eksp. i teor. fis, 31, fasc. 6, 913-922 (1956)
 Issued: 1 / 1957

Since 1955 nuclear spallations have been investigated in the laboratory mentioned below, on the occasion of which particles with $Z \gg 4$ are emitted. The present work describes the more important results obtained by these investigations, which were carried out on finely grained nuclear emulsions of the type P-9 which were irradiated with protons (350, 460, 560 and 660 MeV) of the synchrocyclotron of the Institute for Nuclear Problems of the Academy of Science in the USSR.

Summarizing discussion of results: On the occasion of interaction between energy-rich protons and the nuclei of the emulsion fragments with $Z \gg 3$ are produced in a process with the following peculiarities: The energy-rich multiple-charged particles (kinetic energy per nucleon $> 3 - 4$ MeV) are produced in the emulsion on the occasion of interaction between fast protons and heavy as well as light nuclei in the emulsion. The probability of the emission of such fragments grows considerably with an increase of the energy transferred to the nucleus on the occasion of the collision. The principal part of the fragments observed on the occasion of the spallation of fast nuclei corresponds to particles of $Z \leq 8$. The remaining fragments belong

Žurn.eksp.i teor.fis, 31, fasc.6, 913-922 (1956) CARD 2 / 2 PA - 1877

in about equal portions to various Z up to Z = 15 to 16. The angular distribution of the fragments is highly anisotropic and this anisotropy hardly changes in the case of heavy nuclei (Ag, Br) on the occasion of an increase of the energy of effective particles from 350 to 660 MeV. The ratio "forward/backward" is about 3 : 1. In the case of light nuclei and at 660 MeV this ratio is 15 : 1. The energy distributions of particles with different charges have a common peculiarity: The particles with a multiple charge belong essentially to such energies as result from the COULOMB repulsion of charges. In few cases the energy of the particles with multiple charges is higher. The emission of two and more multiple-charge particles on the occasion of one single spallation of a heavy nucleus is of obvious probability. The energy spectra of the α -particles and protons differ slightly on the occasion of the spallations of Ag- and Br-nuclei which are accompanied by the emission of multiple-charge particles, from the energy spectra of α -particles and protons on the occasion of ordinary spallations; for they are enriched with particles of lower energy. There is a certain angular correlation between fragment and recoil nucleus: they fly apart mainly in opposite directions. In conclusion several hypotheses for the explanation of these phenomena are discussed.

INSTITUTION: Radium Institute of the Academy of Science in the USSR

LOZHKIN, O. V. Cand Phys-Math Sci -- (diss) ~~XXXXXXXXXXXXXXXX~~
"Multiply-Charged Particles in Nuclear ^{disintegrations} ~~Fissions~~ Caused by Protons
With ~~an~~ Energy of 300-660 MEV." Len, 1957. 11 pp 22 cm. (Academy
of Sciences USSR, Radium Inst ~~IM~~ im V. G. Khlopin), 100 copies
(KL, 26-57, 104)

10 STR: 10000000
10000000

10

AUTHOR LOZHKIN, O.V., PA - 2662
TITLE On the nature of the Cone-like Shape of Tracks of Multi-Charged ions
in Nuclear Emulsions.
(K voprosu o prirode konusobraznosti trekov mnogozaryadnykh ionov v ya-
dernoj emulsii, -Russian)
PERIODICAL Zhurnal Eksperim. i Teoret. Fiziki, 1957, Vol 32, Nr 2, pp 208 - 213,
(U.S.S.R.)
Received 5/1957 Reviewed 6/1957
ABSTRACT The experiment: In order to ascertain the influence of the modification
of the specific energy losses on the diminution of the track one must be
able to separate the influence of the range from the influence of the
 δ -electrons. This could be attained with the help of emulsions of wide-
ly varying sensitivities. The author used finely ground nuclear emul-
sions. The plates were irradiated with seven fold charged nitrogen with
an energy of ~ 90 MeV at an angle of 10° towards the surface. The tracks
of the nitrogen particles were photometrically investigated.
The measurable results and a discussion about them: The clearly pro-
nounced thinning out of the tracks of N^{14} -ions in the case of the sen-
sitive emulsions was lacking when less sensitive emulsions were used.
The total density of the dark portions of the negatives characterized
the specific energy losses dE/dx of the nitrogen ions along the track.
The energy losses change along the tracks in question only slightly.
They are able to cause no observable modification of the density of the
dark portions of the negatives in the case of the most sensitive emul-

Card 1/2

On the Nature of the Cone-like Shape of Tracks of Multi- Charged ions in Nuclear Emulsions. PA - 2662

sion. These experimental facts can be explained as follows: The tracks are not narrowed through the total energy losses dE/dx , but only through the unimportant portion of the energy losses caused by collisions. When these collisions occur δ electrons appear which additionally broaden the track. With the weakly sensitive electrons, these δ electrons have no observable photographic effect. In the conclusion still another method for the determination of the charge is discussed. By this method the track of the multi-charged particle is photometrically measured and thereby the dependence of the density of the dark portions of the track on the range of the particle for the last 25 microns of the track is ascertained. The advantages of this method are indicated. (5 ill.)

ASSOCIATION Radium Institute of the Academy of Science of the USSR.
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SUBMITTED 27.6.1957
AVAILABLE Library of Congress
Card 2/2

LOZHKIN, O.V.

56-247/47

AUTHOR

LOZHKIN, O.V.

TITLE

On the CROSS Section for Production of Multiply Charged Particles in the Interaction between Protons and Nuclei (O sechenii obrazovaniya mnogozaryadnykh chastits pri vzaimodeystvii protonov s yadrami)

PERIODICAL

Zhurnal Eksperim. i Teoret. Fiziki, 1957, Vol 33, Nr 2 (8), pp 354 - 357 (U.S.S.R.)

ABSTRACT

By means of the photoplates the formation cross section of multiply charged particles ($Z \geq 4$) in nuclear evaporation caused by fast protons was measured, on which occasion above all the dependence of the cross section on the energy of the protons and on the atomic weight of the target nucleus is of interest

On the occasion of the evaporation of heavy nuclei (Ag, Br) the formation cross section of particles with an energy of $> 1 - 2$ MeV varies between 3 and 12 mb for a bombardment limit of the protons of from 300 - 600 MeV.

At the same proton energies the formation cross section for the evaporation of light nuclei (C, N, O) remains constant with 2 mb. (With 1 illustration, 1 table, and 1 Slavic reference).

Card 1/2

56-2-7/47

On the Cross Section for Production of Multiply Charged Particles
in the Interaction between Protons and Nuclei

ASSOCIATION

Radio Institute of the Academy of Sciences of the USSR
(Radiyevyy institut Akademii nauk SSSR)

PRESENTED BY

SUBMITTED

AVAILABLE

9.3.1957

Library of Congress

Card 2/2

Lozhkin, O.V.

AUTHOR PERFILOV N.A., SHAMOV V.P., LOZHKIN O.V. PA - 2651
TITLE The triple fission of uranium by fast particles.
(Troynoye deleniye urana na bystrykh chastitsakh. - Russian)
PERIODICAL Doklady Akademii Nauk SSSR 1957, Vol 113, Nr 1, pp 75 - 77
(USSR).
Received: 5/1957 Reviewed: 6/1957
ABSTRACT Experimental Data:
Plates saturated with uranium were irradiated by 660 -protons. On examination of the plates several fissions of the uranium were registered where multiple-charge particles were radiated with $Z > 4$. Among these particles a plane threefold fork was found. The traces of all three particles of this fork belong to multiple-charge particles: two belong to fission fragments of a heavy nucleus and the third possesses a much stronger darkening density than the traces of α -particles. The authors used a specially fine-grained emulsion with the limit of sensitivity of ~ 35 MeV for protons. The blackening density along these three traces was measured photometrically. The results found for total blackening are shown in form of a diagram and compared with the blackening of the traces of nitrogen ions. The nuclear charge number can be determined from the angle of inclination of the blackening curve. For one of the particles the value of $Z_{III} = 9,8 \pm 1$. was

CARD 1/2

The triple fission of uranium by fast particles.

PA - 2651

obtained. The traces of the particles I and II are actually traces of multiple-charge ions of the type of fission fragments. The traces of the particles I and II are equal and therefore the particles may also be looked upon as equal. In the case of $Z_{III} = 10$, $Z_I = Z_{II} = 41$ is obtained.

Computation of this triple fork:

The orbit of the primary proton also lies within the plane of the fork. The authors estimated the kinetic energies and the momenta of the two heavy fragments and the light particles. According to this evaluation a triple fork is produced by a triple fission of an uranium nucleus, the initial excitation energy of which is small. Herefrom, however, new difficulties arise. The authors are of the opinion that this triple fork can be explained by a very special course of nuclear reaction. (4 illustrations.)

ASSOCIATION: Institute for Radiology of the Academy of Science of the USSR.
PRESENTED BY: -

SUBMITTED: 4.10. 1956.

AVAILABLE: Library of Congress.

CARD 2/2

PERFILOV, N. A., PROKOPYEVA, E. I., NOVIKOVA, N. R., LOZHKIN, O. V., DAROVSKIKH, V. F.,
and DENISENKO, XXXX G. F. (Institut du Radium, Leningrad, USSR)

"Sur Les Principes de Preparation d'emulsions a Grains Tres Fins Pour Les
Recherches Nucleaires et Leurs Proprietes."

paper presented at Program of the Second International Colloquium on Corpuscular
Photography. Montreal, 21 Aug - 7 Sep 1958.

Encl: B-3,114,647.

LOZHKIN, O. V.

Dissertations. Branch of Chemical Sciences, Jul-Dec 1957.
Vest. Ak Nauk SSSR, No. 4, 1958, pp. 117-8

At the Inst. for Chemical Physics dissertation defended for degree Cand.
Physico-Math. Sci.

FRANKEVICH, Ye. L. - Mass-Spectrometrical Investigation of Elementary Ionic-
Molecular Processes in the Gas Phase.

At the Radium Institute im V. G. Khlopin the following Dissertations for the
degree of a Candidate of Physico-Mathematical Sciences were defended:

GRIGOROV, K. Ya. - Conversion Electrons of Lutetium and Thulium Isotopes Deficient
in Neutrons.

LOZHKIN, O. V. - Multi-Charged Particles in Nuclear Fissions Caused by Protons
with an Energy of 300-600 MeV.

Lozhkin, O. V.

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24.6600

S/056/60/038/02/06/061
82010
B006/B011

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

TITLE: Fragmentation¹⁹ 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 Π -P (P-R) emulsion (200 μ 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 $Z \geq 4$.

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

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S/056/60/058/02/06/061
B006/B011

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 $> 100 \mu$). 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

82010
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B006/B011

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-

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

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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

W

Card 4/4

85335

S/120/60/000/005/003/051
E032/E514

2A.6810

AUTHORS: Rimskiy-Korsakov, A.A. and Lozhkin, O.V.
TITLE: Identification of Particles in Nuclear Emulsions¹⁹ Using
the Scale Method

PERIODICAL: Pribory i tekhnika eksperimenta, 1960,³⁸ No.5, pp.20-23

TEXT: The method consists in the following. The track under investigation is examined through a microscope fitted with an eye-piece containing an eye-piece scale divided into equal sections of known length. When the scale is superimposed on the image of the track, some of the sections will be completely filled with grains, some will be only partly filled with grains and some will be empty (Fig.1). The track density is characterized by the number G of sections which are completely filled with the grains. The usual probability theory is used to determine the optimum cell size leading to the best resolution. Once the optimum size has been determined, the method is very convenient and rapid. The principle of the method was first suggested by Serebrennikov (Ref.1). Acknowledgments are made to N. A. Perfilov for his interest and discussions. There are 4 figures and 1 Soviet reference.

X

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85335

S/120/60/000/005/003/051
E032/E514

Identification of Particles in Nuclear Emulsions Using the Scale
Method

ASSOCIATION: Radnevyi institut AN SSSR
(Radium Institute, AS USSR)

SUBMITTED: September 10, 1959

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84970

S/056/60/038/005/051/057/XX
B006/B070

24.6600

AUTHORS: Lozhkin, O.V., Perfilov, N. A., Rimskiy-Korsakov, A. A.,
Fromlin, J., Professor of Birmingham University, Great
Britain
TITLE: Nuclear Disintegration¹⁹ in a Photographic Emulsion Caused by
930-Mev Protons
PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1960,
Vol. 38, No. 5, pp. 1388 - 1398

TEXT: The present paper presents experimental investigations on the interaction of 930-Mev protons with emulsion nuclei, taking into particular consideration disintegrations with an emission of fragments with $Z \geq 3$. Particularly fine-grained emulsions of the type $\Pi - P$ (P-R), prepared in the laboratory of N. A. Perfilov, were used for the experiments. The irradiation was performed on the proton synchrotron in Birmingham. Fig. 1 shows the sensitivity characteristic of the P-R emulsion (without sensitizing with triethanol amine). Particles with $Z = 1 - 3$ were identified by the "scale method" first used by Yu. I. Serebrennikov (Ref. 6). The disintegration events were divided into heavy and light emulsion nuclei according to

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Nuclear Disintegration in a Photographic
Emulsion Caused by 930-Mev Protons

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1) the charge sum of the particles in the disintegration ($\Sigma Z > 8$ - heavy nuclei), 2) the existence or nonexistence of recoil nuclei (existence - heavy nuclei), 3) the existence or nonexistence of short-range alpha particles ($< 50\mu$) or protons ($< 100\mu$) (existence - light nuclei). A total of 1054 stars with three or more prongs were analyzed, 905 of which were described as disintegrations of heavy nuclei and 149 of light nuclei. 11 events were established with two fragments having $12 > Z \geq 4$ with opposite directions of emission (8μ). These events, according to V. P. Shamov, are due to the disintegration of silver nuclei; of all stars with $Z \geq 4$ fragments about 5% were such. Fig. 2 shows the blackening distribution; Fig. 3 shows the distribution of $Z \geq 4$ fragment tracks with respect to their integral width. Figs. 4 and 5 show the relative probabilities of emission of $Z \geq 4$ fragments as a function of the particles participating in the disintegration at $E_p < 30$, ≥ 30 , and ≥ 100 Mev for Ag and Br nuclei. Fig. 6 shows the energy distribution of Li fragments in the disintegration of Ag and Br nuclei by 930-Mev and 6.2-Bev protons. Fig. 7 shows the distribution of solid angles between the fragments and the fast cascade particles. The numerical results for stars with three or more prongs are collected in a table;

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Nuclear Disintegration in a Photographic Emulsion Caused by 930-Mev Protons

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	Ag, Br	C, N, O
Mean number of particles	H isotopes	3.7 ± 0.8
	He isotopes	0.8 ± 0.1
	Li isotopes	0.18 ± 0.04
	Z ≥ 4 fragments	0.10 ± 0.01
Cross section [mb]	Li isotopes	135 ± 31
	Z ≥ 4 fragments	62 ± 11
Yield ratio	$\frac{\text{He}^3 + \text{He}^4}{\text{H}^1 + \text{H}^2 + \text{H}^3}$	0.22 ± 0.07
	$\frac{\text{H}^2 + \text{H}^3}{\text{H}^1 + \text{H}^2 + \text{H}^3}$	0.18 ± 0.8
	$\frac{\text{Li}^8}{\text{Li}^6 + \text{Li}^7 + \text{Li}^8}$	0.012 ± 0.009
		0.03 ± 0.04

A detailed discussion of the results is given in the last section of the work with particular reference to the fragmentation mechanism. There are

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Nuclear Disintegration in a Photographic
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11 figures, 1 table, and 27 references: 11 Soviet, 2 British, 1 French,
1 Italian, 1 Japanese, and 11 US.

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

SUBMITTED: November 18, 1959

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21(7)

AUTHORS:

Perfilov, N. A.,

S/053/60/070/01/001/007

Lozhkin, O. V., Shamov, V. P.

B006/B017

TITLE:

The Processes of Fragmentation and Fission¹⁹ in the Interaction
Between High-energy Particles and Nuclei

PERIODICAL:

Uspekhi fizicheskikh nauk, 1960, Vol 70, Nr 1, pp 3-56 (USSR)

ABSTRACT:

The present paper gives a detailed survey on the fundamental problems of nuclear fragmentation and fission. From the large number of publications available in this field individual examples are chosen and discussed to illustrate the chapters. In the introduction the cascade evaporation model used for describing nuclear reactions induced by particles with energies ranging from 10^2 to 10^4 Mev is discussed and the conclusions drawn from this model are investigated individually. Part I deals with fragmentation. Fragmentation is any form of nuclear disintegration on which multiply-charged particles with $Z > 3$ are formed. The individual sections of this part deal with 1) fragmentation cross section; a three-page table and a number of well selected diagrams illustrate the effects influencing the cross sections. 2) The multiplicity in the fragmenta-

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The Processes of Fragmentation and Fission
in the Interaction Between High-energy
Particles and Nuclei

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tion process; 3) the nature of the fragments produced, 4) energy distribution of the fragments (Figs 11, 12, 13); 5) angular distribution of the fragments (Fig 14, Table 3); 6) the properties of the residual nuclei; 7) the mechanism of fragmentation (nuclear cascade process, particle evaporation of the excited nucleus, process of asymmetrical nuclear fission, hypotheses on the fragmentation process). Part II deals with the characteristics and the experimental results of nuclear fission at high excitation energies. Section 1: fission cross sections; section 2: angular distribution of the fission fragments, section 3: mass spectra in fission (Figs 19, 20, 21); section 4: fission mechanism and the methods of its determination (investigation of the energy spectrum and of the number of charged particles - photomethod; analysis of the ranges of the fragments in the case of different primary excitation energies; investigation of the angular correlations of the emitted particles with the fragments; Monte Carlo method). For each of these methods which are individually described the authors give examples (mainly taken from western publications). In the paper

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The Processes of Fragmentation and Fission
in the Interaction Between High-energy
Particles and Nuclei

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only N. S. Ivanova, V. Sedorov, Ye. Grigor'yev, V. N. Mekhedov,
O. V. Lozhkin, and V. I. Ostroumov as well as R. Filov are
mentioned among the large number of non-Soviet scientists.
There are 25 figures, 9 tables, and 214 references, 74 of which
are Soviet. ✓

Card 3/3

PERFILOV, N.A.; PROKOF'YEVA, Ye.I.; NOVIKOVA, N.R.; LOZHKIN, O.V.;
DAROVSKIKH, V.F.; DENISENKO, G.F.

Manufacturing principle and properties of extra-fine grain
emulsions for nuclear investigations. Zhur.nauch.i prikl.fot.
i kin. 5 no.4:262-273 J1-Ag '60. (MIRA 13:8)

1. Radiyevyy institut im. V.G.Khlopina AN SSSR.
(Photographic emulsions)
(Photography, Particle track)

GORICHEV, P.A.; LOZHKIN, O.V.; PERFILOV, N.A.

Charge distribution of fragments in nuclear fission. Zhur. eksp. i teor.
fiz. 41 no.1:35-37 JI '61. (MIRA 14:7)

1. Radiyevyy institut AN SSSR.
(Nuclear fission)

GORICHEV, P.A.; LOZHKIN, O.V.; PERFILOV, N.A.

Theory of the nuclear structure and manifesting itself in interactions between high-energy particles and nuclei.

Izv. AN SSSR. Ser. fiz. 26 no.9:1190-1193

MIRA 15:9)

(Nuclear reactions)

(Nuclear models)

PERFILOV, Nikolay Aleksandrovich; LOZHKIN, Oleg Vladimirovich;
OSTROUMOV, Vsevolod Ivanovich; SUVOROV, I.V., red. izd-va;
KULAGINA, T.I., red. izd-va; KONDRAT'YEVA, M.N., tekhn. red.

[Nuclear reactions caused by high-energy particles] Iadernye
reaktsii pod deistviem chastits vysokikh energii. Moskva,
Izd-vo Akad. nauk SSSR, 1962. 250 p. (MIRA 15:10)
(Nuclear reactions)

LOZHKIN, O.V.

PHASE I BOOK EXPLOITATION

SOV/6253

Perfilov, Nikolay Aleksandrovich, Oleg Vladimirovich Lozhkin, and Vsevolod Ivanovich Ostroumov

Yadernyye reaktsii pod deystviyem chastits vysokikh energiy (Nuclear Reactions Under the Action of High-Energy Particles) Moscow, Izd-vo AN SSSR, 1962. 250 p. Errata slip inserted. 3000 copies printed.

Sponsoring Agency: Akademiya nauk SSSR, Radiyevyy institut im. V. G. Khlopina.

Eds. of Publishing House: I. V. Suvorov and T. I. Kulagina; Tech. Ed.: M. N. Kondrat'yeva.

PURPOSE: The book is intended for experimental physicists and radiochemists concerned with the investigation of nuclear reactions at high energies, as well as for students in advanced courses in the physics of atomic nuclei.

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Nuclear Reactions (Cont.)

SOV/6253

COVERAGE: The book investigates collision processes of high-energy (50 to 10^4 Mev) particles with atomic nuclei, presents experimental results on nuclear reactions, and discusses theoretical concepts on the interaction of nuclear particles. Experimental methods for the investigation of nuclear reactions are described. No personalities are mentioned. References accompany each chapter.

TABLE OF CONTENTS:

Preface	3
PART I. THEORETICAL CONCEPTS OF THE INTERACTION OF HIGH-ENERGY PARTICLES WITH NUCLEI	
Ch. 1. Optical Model	5
1. Preliminary remarks	5
2. Basic conditions of optical model	8

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S/120/63/000/001/005/072
E032/E314

AUTHORS: Gorichev, P.A. and Lozhkin, O.V.

TITLE: Identification of short-range multiply-charged particles in nuclear emulsions

PERIODICAL: Pribery i tekhnika eksperimenta, no. 1, 1963,
30 - 35

TEXT: A semi-automatic photometric apparatus is described for determination of the width of particle tracks in nuclear emulsions. It is suitable, for example, for studies involving the identification of low-energy fission products having ranges equal to a few tens of microns. The image of the track can be inspected visually and by means of a beam-splitter, so that the image is also thrown onto a vibrating mirror which throws it onto a slit in front of a photomultiplier. As the track image is swept past the photomultiplier slit, the latter produces a current pulse whose width is proportional to the width of the track. The pulse is then converted into a square pulse which, in turn, is converted into standard pulses whose number is proportional to the length of the square pulse. These pulses are then counted up by a scaler.
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Identification of

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E032/E314

In order to evaluate the possibilities of the device a study was made of B_{11}^5 and C_{12}^6 tracks in PR emulsions which were sensitive to relativistic particles. It was found that the integral width, equal to the area under the width-versus-length curve, was a suitable parameter for differentiating between the particles. Complete differentiation between B_{11}^5 and C_{12}^6 is achieved for integral widths in excess of 40 μ . There are 8 figures.

ASSOCIATION: Radiyevyy institut AN SSSR (Radium Institute of the AS USSR)

SUBMITTED: March 31, 1962

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ACCESSION NO: AP4013022

S/0166/63/000/006/0035/0039

AUTHORS: Azimov, S. A.; Karimova, R.; Lozhkin, O. V.

TITLE: Angular correlation of fragments and light particles in nuclear splitting

SOURCE: AN UzSSR. Izv. Seriya fiziko-matematicheskikh nauk, no. 6, 1963, 35-39

TOPIC TAGS: nuclear splitting, nuclear fragment, nuclear emulsion, angular correlation

ABSTRACT: A study was made of the experimental angular correlation of the products of nuclear splitting in which compound particles (fragments) are formed. Such correlation of protons and alpha-particles with fragments is a consequence of several hypothesized mechanisms of the fragmentation process. An earlier study, using 660 Mev and 9 Gamma ev protons interacting with Ag and Br nuclei, gave uncertain results. In this work, nuclear emulsions of the type P-9ch were irradiated by 660 Mev protons in the phasotron LYaP-OIYaI. The observed angular distribution of fragments, protons, and alpha-particles with respect to the direction of the incident protons is compared with Monte Carlo computations of the angular correlation in the laboratory coordinate system, assuming independent random emission of fragments and light particles. The agreement is sufficiently good to

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Justify the conclusion that a purely random angular distribution is observed for both slow and fast fragments (measured in terms of track length, $R: 15\mu \leq R < 80\mu$ and $R \geq 80\mu$ respectively). From the observations it is deduced that, in the process of fragmentation of Ag and Br nuclei, protons and alpha-particles are emitted in the fragmentation process rather than being produced later from the decay of excited fragments. Hence, it is further concluded that relatively stable fragments with $z=4-9$ are formed with large probability in the splitting of Ag and Br nuclei. Orig. art. has: 5 diagrams and 1 table.

ASSOCIATION: Institut yadernoy fiziki AN UzSSR (Institute of Nuclear Physics AN UzSSR)

SUBMITTED: 07Aug63

DATE ACQ: 03Mar64

ENCL: 00

SUB CODE: NS

NO REF SOV: 011

OTHER: 005

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LEKSIN, G.A.; LOZHKIN, O.V.

Conference on the Physics of High-energy Particles and Nuclear
Structure. Atom. energ. 15 no.2:172-174 Ag '63. (MIRA 16:8)
(Nuclear physics--Congresses)

ACCESSION NR: AP4009095

S/0056/63/045/006/1784/1792

AUTHORS: Gorichev, P. A.; Lozhkin, O. V.; Perfilov, N. A.

TITLE: Short range products of nuclear disintegrations induced by 2--9 GeV protons

SOURCE: Zhurnal eksper. i teoret. fiziki, v. 45, no. 6, 1963, 1784-1792

TOPIC TAGS: nuclear disintegrations, emulsion nuclei, heavy emulsion nuclei, short range particles, silver fission, bromine fission, fission cross section, disintegration cross section

ABSTRACT: In an attempt to reconcile the highly contradictory experimental data concerning the dependence of the fission cross section of silver on the incident-proton energy, a thorough analysis is made of the heavy emulsion nuclei disintegrations in which two short range particles are emitted mainly in opposite directions. It

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