

SMIRIN, V. K., ROTSHIL'D, E. V.

"The landscape confining the plague epizootic in the northern Kyzylkum."  
Page 267

Desyatoye soveshchaniye po parazitologicheskim problemam i prirodnoochagovym  
boleznyam. 22-29 Okt'yabrya 1959 g. (Tenth Conference on Parasitological  
Problems and Diseases with Natural Foci 22-29 October 1959), Moscow-  
Leningrad, 1959, Academy of Medical Sciences USSR and Academy of Sciences  
USSR, No. 1 254pp.

Aralomorskaya Antiplague Station

SMIRIN, V.M.

Nesting of the harrier eagle in the Aral Sea region. Zool. zhnr.  
38 no.11:1756-1757 N '59 (MIRA 13:3)

1. Aral Sea Anti-Plague Station.  
(Aral Sea region--Hawks)

KRIVOSHEEV, V.G.; ROTSHIL'D, Ye.V.; SMIRIN, V.M.

Distribution and numbers of the Persian gazelle and saiga in  
northern Kyzyl Kum. Vop.geog. no.48:55-70 '60.

(MIRA 13:7)

(Kyzyl Kum--Gazelles) (Kyzyl Kum--Saiga)

SMIRIN, V.M.

Distribution of some mammals in the present delta of the Syr Darya.  
Biol. MOIP. Otd. biol. 65 no.5:136-137 8-0 '60. (MIRA 13:12)  
(SYR DARYA DELTA—RODENTIA)

ROTSHIL'D, Ye.V.; SMIRIN, V.M.

Relationship between epizootic foci of plague and particular landscape types in the northern Kyzyl Kum. Biul. MOIP. Otd. biol. 66 no.1:5-22 Ja-F '61. (MIRA 14:3)  
(KYZYL KUM—GERBILS AS CARRIERS OF DISEASE) (PLAGUE)

SMIRIN, V.M.

Distribution of greater gerbils in the ancient alluvial lowlands  
of the northern Kyzyl Kum. Biul.MOIP.Otd.biol. 67 no.4:159 JI-Ag  
'62. (MIRA 15:10)

(KYZYL KUM—GERBILS)

FLINT, V.Ye.; CHUGUNOV, Yu.D.; SMIRIN, V.M.; FORMOZOV, A.N., prof., red.;  
MITIN, R.S., red.

[Mammals of the U.S.S.R.] Mlekopitaiushchie SSSR. Moskva,  
Mysl', 1965. 437 p. (MIRA 18:7)

ACC NR: AP7001168 (A,N) SOURCE CODE: UR/0439/66/045/007/1090/1092

AUTHOR: Anan'in, V. V.; Smirin, V. M.; Khalimov, M. Kh.; Kokovin, I. L.; Panova, V. V.; Sakhartseva T. F.

ORG: Institute of Epidemiology and Microbiology, Academy of Medical Sciences, SSSR, Moscow (Institut epidemiologii i mikrobiologii Akademii meditsinskikh nauk SSSR); Dushanbe Institute of Epidemiology, Ministry of Public Health, SSSR (Dushanbinskiy institut epidemiologii Ministerstva zdravookhraneniya SSSR); Tadzhik Republic Sanitary-Epidemiological Station, Dushanbe (Tadzhikskaya respublikanskaya sanitarno-epidemiologicheskaya stantsiya)

TITLE: Natural foci of leptospirosis in southwest Tadzhikistan

SOURCE: Zoologicheskii zhurnal, v. 45, no. 7, 1966, 1090-1092

TOPIC TAGS: animal disease, leptospirosis, mouse

ABSTRACT: Six natural foci of leptospirosis were identified in river valleys and flood plains of southern and western Tadzhikistan in the summer of 1964. Trapping of small mammals, found mostly in weeds near lakes and irrigation canals, yielded 469 specimens: 360 domestic mice (the dominant species), and field mice, Turkestan rats, voles, jirds and shrews. Leptospira were found in the kidneys of 19 of the domestic

Card 1/2

UDC: 59:616.986.724(575.3)



ACC NR: AP7001168

mice. Eighteen strains of leptospira isolated from these mice were identified by the agglutination and lysis reaction as belonging to the serological group hebdomadis, type sejroe (standard strain M-84). The leptospirais carriers were mostly healthy adult males (*Mus musculus*).  
Orig. art. has: 1 table. [WA-50; CBE No. 14]

[JS]

SUB CODE: 06/      SUBM DATE: none/      ORIG REF: 008

Card 2/2

SMIRIN, Yu.M.

Distribution of the greater gerbil (*Rhombomys opimus* Licht.) in the right-bank area of the middle Syr Darya Valley. Zool. zhur. no.8: 1266-1269 Ag '60. (MIRA 13:8)

1. Biological Pedological Faculty, Moscow State University.  
(Kazakhstan--Gerbils)

GORNOSTAYEV, G.N.; LOBACHEV, V.S.; SMIRIN, Yu.M.

Distribution of the lesser suglik (*Citellus pygmaeus* Pall.) in the  
northeastern part of the Aral Sea region. *Biul. MOIP. Otd. biol.*  
65 no.5:101-102 S-0 '60. (MIRA 13:12)  
(ARAL SEA REGION—SUSLIKS)

SMIRIN, Yu.M.

Effect of laboratory conditions on chemical thermoregulation in  
the red-backed bank vole (*Clethrionomys glareolus* Schreb.) in  
winter. *Biul. MOIP. Otd. biol.* 66 no.3:20-24 My-Je '61.  
(MIRA 14:6)

(MICE AS LABORATORY ANIMALS)  
(BODY TEMPERATURE REGULATION)

SHILOV, I.A.; SMIRIN, Yu.M.

Ecology of food storage by the sparrow owl. Nauch. dokl. vys.  
shkoly; biol. nauki no. 2:43-48 '64. (MIRA 17:5)

1. Rekomendovana kafedroy zoologii pozvonochnykh Moskovskogo  
gosudarstvennogo universiteta im. M.V.Lomonosova.

SMIRIN, Yu.M.

Population dynamics of murine rodents in various forests of  
the Moscow region. Zool. zhur. 43 no.10:1544-1551 '64.  
(MIRA 17:12)

1. Biologo-pochvennyy fakul'tet Moskovskogo gosudarstvennogo  
universiteta.

SMIRIN, Yu.M.

Seasonal population dynamics of forest murine rodents in the  
vicinity of Moscow. Biul MOIP Otd. biol. 70 no. 6:13-20  
N-D '65 (MIRA 19:1)

FEDOSENKO, A.K.; SMIRINA, E.M.; BERNSHTEYN, A.D.

Materials on the reproduction of *Xiticola argentatus leucurus*  
Sev. in the Trans-Ili Alatau. *Biul. MGIP Otd. biol.* 70 no. 6:  
21-29 N-D '65 (MIRA 19:1)



KHAYTUN, E.I.; SMIRINA, V.A.

Use of VM-35 switches as isolaters. Prom. energ. 16 no.8:  
42-43 Ag '61. (MIRA 14:9)

(Electric switchgear)

ENTEELIS, S.G.; EPPLE, G.V.; SMIRKOV, N.M.

Kinetics of the reduction of triphenylcarbinol by isopropyl alcohol in an aqueous sulfuric acid medium by hydride transfer.  
Dokl. AN SSSR 136 no. 3:667-670 Ja '61. (MIRA 14:2)

1. Institut khimicheskoy fiziki AN SSSR. Predstavleno akademikom V.N. Kondrat'yevym.  
(Reduction, Chemical) (Methanol) (Isopropyl alcohol)

SMIRNA, Ovidiu, maistru; VOICU, Gh.

At a rapid pace. Constr Buc 16 no.735:1 8 F'64.

SMIRNA, Ovidiu

We start to work with insured documentation. Constr Buc 15  
no.728:1 21 D '63.

1. Mastru, presedintele comitatului sindical de sectie de la  
santierul 3 al Intreprinderii no.1 (Tristul Regional De Constructii  
de Locuinte), Iasi.

SMIRNA, Ovidiu

On labor protection themes. Constr Buc 16 no. 738:4  
29 February 1964.

1. Presedintele comitetului sindical de sectie de la santierul  
II al grupului nr. 1, Trustul Regional de Constructii de  
Locuinte, Iasi.

ROMASCANU, Mircea, ing.; BUDAI, Teodor, ing.; BEJENARU, Nicolaie,  
ing.; POPESCU, Anton; SANDULESCU, Mihai, ing.; SMIRNA, Ovidiu

Large panel construction, a rapid, productive, and economical  
method. Constr Buc 16 no. 743:3 4 April '64

SMIRIA, Ovidiu, correspondent; DIMA, Dumitru, correspondent; DUMITRESCU, Constantin, correspondent; GIURGEA, S., correspondent; BUCUR, St., correspondent

Top collectives in socialist competition. Constr Buc 17 no.790:1, 2  
27 F '65.

SMIRNA, Ovidiu, coresp.; BENES, Lazar, coresp.

A large construction site in Iasi. Constr Buc 17 no.795:1  
3 Ap '65.



SMIRNAYA, L.M. (Odesskaya oblast')

Stimulation in comprehensive treatment of poliomyelitis  
consequences. Vrach.delo no.3:86-89 Mr '63. (MIRA 16:4)

1. Detskiy sanatoriy "Khadzhibey" (nauchnyy rukovoditel' - prof.  
F.N.Serkov), Odesskaya oblast'.  
(POLIOMYELITIS) (VIBRATION (THERAPEUTICS))

SERDYUK, L.S.; SILICH, U.F.; SMIRNAYA, V.S.

Extraction-photometric determination of yttrium and lanthanum  
with alizarin S. Trudy Kom.anal.khim. 14:271-278 '63.  
(MIRA 16:11)

ACCESSION NR: AP4033642

S/0075/64/019/004/0451/0456

AUTHOR: Serdyuk, L. S.; Sainaya, V. S.

TITLE: Spectrophotometric study of reactions of cesium, lanthanum and yttrium with xylenol orange

SOURCE: Zhurnal analiticheskoy khimii, v. 19, no. 4, 1964, 451-456

TOPIC TAGS: cesium complex, lanthanum complex, yttrium complex, spectrophotometry, chemical analysis, xylenol orange, photometric determination

ABSTRACT: The purpose of this work was to investigate, spectrophotometrically, the reaction of xylenol orange [3,3'-bis-di-(carboxymethyl)-aminomethyl-o-cresol-sulfophthalein] with rare earth elements using cesium, lanthanum and yttrium. It was further planned to develop a method for spectrophotometric determination of these elements. For the study, the complex formation of the optical density of xylenol orange solutions and of its complexes with cesium, lanthanum and yttrium was determined as a function of the pH of the solution. The optical density of the solutions was measured by means of spectrophotometer CF-4 and photocolormeter FEK-56. The measurements of pH were done on an IP-5 pH meter. It has been shown

Card 1/2

L 34209-65

ACCESSION NR: AP5005840

S/0075/65/020/002/0161/0164

AUTHOR: Serdyuk, L.S.; Smirnaya, V.S.

TITLE: Spectrophotometric study of the reactions of yttrium, lanthanum, and cerium with methylthymol blue

SOURCE: Zhurnal analiticheskoy khimii, v. 20, no. 2, 1965, 161-164

TOPIC TAGS: rare earth element, yttrium analysis, lanthanum analysis, cerium analysis, methylthymol blue, colorimetric analysis

ABSTRACT: The study was carried out in order to establish the possibility of determining Y, La, and Ce photometrically with the aid of methylthymol blue. The latter forms complexes with these elements, and the complexes have an absorption peak at 600 m $\mu$ . Using curves of isomolar series, the authors determined the composition of these complexes: the molar ratio of metal to dye is 1:1. From these curves, the instability constants of the complexes were calculated. The optical density of the complexes was studied as a function of the concentration of the dye and of the metals under consideration. It was found that Y, La, and Ce can be determined photometrically by means of methylthymol blue at pH 6.5, this being the value at which the difference between the optical density of the solutions of the reagent and complexes is the greatest. Orig. art. has: 7 figures and Card 1/2

L 34209-68

ACCESSION NR: AP5005840

1 table.

ASSOCIATION: Dnepropetrovskiy gosudarstvennyy universitet (Dnepropetrovsk state university)

SUBMITTED: 06Mar64

ENCL: 00

SUB CODE: IC

NO REF SOV: 005

OTHER: 005

Card 2/2

*Smirnit'skaya, G.V.*  
USSR/Electronics - Vacuum Techniques

H-9

Abs Jour : Ref Zhur - Fizika, No 3, 1957, No 7193

Author : Reykhrudel', E.M., Smirnit'skaya, G.V., Borisonko, A.I.  
Title : Ionic Pump with Cold Electrodes and Its Characteristics

Orig Pub : Radiotekhn. i elektronika, 1956, 1, No 2, 255-259

Abstract : An investigation was made of the absorption of gases in an electric discharge by cold cathodes, placed in a longitudinal magnetic field at a pressure  $10^{-2}$  --  $10^{-8}$  mm mercury, voltages up to 4.5 kv, and magnetic field intensities of 350 -- 1,000 oersted, for air, neon, and helium. The smaller pump-out velocity in the case of neon and helium is attributed to weaker cathode sputtering in these gases. The optimum ratios between the applied voltages and the intensity of the magnetic field have been chosen experimentally. It is shown that the anode material does not play a substantial role, and that the best results are obtained with cathodes made of tantalum, molybdenum, and niobium. The distribution of the current density on the surface of the cathode is investigated, and it is shown that in the cathode-sputtering process the greatest

Card : 1/2

dependence of the pump-out speed on the geometry of the discharge gap, on the distance between electrodes, and on the diameter of the tube has been established. The pump can operate on ac and dc, and there is no saturation. The

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connecting several sections in parallel (in a single tube).  
Bibliography, 7 titles

Card : 2/2

*Smirnit'skaya, G.V.*

AUTHORS: Smirnit'skaya, G.V., and E.M. Reykhrudel' 109-10-15/19

TITLE: Kinetics of the Electrons in a Discharge in Magnetic Fields at Low Pressures (O kinetike elektronov v razryade v magnitnom pole pri nizkikh **davleniyakh**)

PERIODICAL: Radiotekhnika i Elektronika, 1957, Vol.II, No.10, pp. 1303 - 1306 (USSR)

ABSTRACT: The discharge device considered is a low-pressure tube having a ring anode and two disc cathodes situated at equal distances from the anode: radius of the anode is  $r$  and

109-10-15/19

Kinetics of the Electrons in a Discharge in Magnetic Fields at Low Pressures.

by Eqs. (2), (3) and (4), which are subject to the following boundary conditions: an electron has initial velocities  $\dot{z}_0$  and  $\dot{r}_0$  in the direction of the  $z$  and  $r$  axes, respectively.

Solution of Eq.(2) shows that an electron is subject to a harmonic motion in the direction of the axis  $z$ , while in the plane  $r\theta$  there are three solutions. At magnetic fields greater than a certain critical value  $H_{kp}$ , the electron is subject to both a rotation and a harmonic motion (see Fig.2a); the solutions for this case are given by Equations (5) and (6). For magnetic fields equal to or lower than  $H_{kp}$ , the electron trajectories are in the form of an exponential spiral (see Fig.2b). From the above, it is concluded that a glow discharge cannot exist in the tube at magnetic fields lower than  $H_{kp}$ . This result was confirmed by some experiments which showed that at  $U_a = 3\ 000\ V$ ,  $p = 10^{-6}\ \text{mmHg}$ , no discharge could be obtained at magnetic fields less than 200 Oe.

Card2/3

↑  
IONIZATION METHODS FOR DEVELOPING HIGH VACUUM. ↓

E. M. Rekhryzel and G. V. Smirnitshaya (Lomonosov  
Moscow State Univ.); Priroda 48, 57-61(1957) Sept. (In  
Russian)

Descriptions and designs are given for ion pumps with  
incandescent cathodes working on the gas ejection princi-  
ple and with cold cathodes working on the gas absorption  
principle. (R.V.J.)

5  
1-4E3d

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REYKHRUDEL', E.M.; SMIRNITSKAYA, G.V.

Static and dynamic characteristics of a discharge connected with oscillating electrons in a magnetic field. Izv.vys.ucheb.zav.; radiofiz. 1 no.2:36-44 '58. (MIRA 11:11)

1. Moskovskiy gosudarstvennyy universitet.  
(Electric discharges through gases)

REYKHRUDEL', E.M.; SMIRNITSKAYA, G.V.

Special features in the ignition of a discharge in a high vacuum  
located in a magnetic field. *Izv.vys.ucheb.zav.; radiofiz.* 1  
*no.2:45-50 '58.* (MIRA 11:11)

1. Moskovsky gosudarstvennyy universitet.  
(*Electric discharges through gases*)

9(4)

AUTHORS: Smirnitskaya, G.V. and Reykhrudel', E.M. SOV/55-58-2-16/35

TITLE: Kinetics of Electrons in the Electromagnetic Field of a Magnetic Ionization Pressure Gauge and of an Ion Pump (Kinetika elektronov v elektromagnitnom pole magnitnogo ionizatsionnogo manometra i ionnogo nasosa)

PERIODICAL: Vestnik Moskovskogo Universiteta. Seriya matematiki, mekhaniki, astronomii, fiziki, khimii, 1958, Nr 2, pp 121-132 (USSR)

ABSTRACT: The paper contains a theoretical investigation of the motion of electrons in a magnetic longitudinal field and a nonuniform electric field. The fields correspond about to the field distribution in an ionization manometer and in an ion pump. The calculation does not consider the spatial charge and holds only for the relations before the ignition and for the burning discharge under low pressure ( $10^{-6}$ - $10^{-8}$  mm Hg). Under these suppositions the cathode range extends over the whole discharge interval, and the influence of the volume charges on the electron motion can be neglected. The investigation of the kinetics of charged particles in the conditions chosen in the vacuum permits to explain how the discharge develops in the magnetic field under low

Card 1/2

Kinetics of Electrons in the Electromagnetic Field      SOV/55-58-2-16/35  
of a Magnetic Ionization Pressure Gauge and of an Ion Pump

pressure and how large the values E and H have to be for a  
pressure of  $10^{-6}$ - $10^{-7}$  cm Hg, in order for a discharge  
to take place.

There are 18 references, 7 of which are Soviet, 2 French,  
and 9 American.

ASSOCIATION: Kafedra obshchey fiziki dlya biologo-pochvennogo i dr.f-tov  
(Chair of General Physics of the Faculty of Soil Biology  
and other Faculties) [Moscow Univ.]

SUBMITTED: June 24, 1957

Card 2/2

SMIRNITSKAYA, G.: REJHRUDEL, E.

"Kinetics of electrons in the electromagnetic field of the magnetic manometer of ionization and of the ionic pump"

Buletin. Seria Shkencat Natyrore. Tirane, Albania. Vol. 12, no. 3, 1958

Monthly list of East European Accessions (EEAI), IC, Vol. 8, No. 6, Jun 59, Unclas

SMIRNITSKAYA, G.V.

64702

24.2120  
AUTHORS: Gerasovskiy, V.L., Luk'yanov, S.P., Spivak, G.V. and Shrotenko, I.G.  
TITLE: Report on the Second All-Union Conference on Gas Electronics

PERIODICAL: Radiotekhnika i elektronika, 1959, Vol 4, Nr 8, pp 1339 - 1338 (USSR)

ABSTRACT: The conference was organized by the Ac.Sc.USSR, the Ministry of Higher Education and Moscow State University. A.A. Limonov - "Measurement of the Gas Density During the Dynamic Operation of a Discharge" (see p 1306 of the Journal). A.V. Nedospasov - "The Nature of a Striated Positive Column". V.L. Parfai and Yu.M. Kagan - "The Theory of Probes for Arbitrary Pressures". Yu.M. Kagan et al. - "The Positive Column of a Discharge in a Discharge Regime". M.V. Kuznetsov - "Influence of the Processes of the Annihilation of the Negative Ions on Their Concentration in the Column". L.L. Esashchik - "Anomalous Scattering, Emission of Plasma Oscillations and Plasma Resonance". E.K. Klimantov - "Excitations in Plasma (the Langmuir Turbulence) and the Theory of Non-linear Oscillations". I.G. Martinkov and I.G. Korshakovich - "Dependence of the Temperature in the Near-electrode Region of a Pulse Discharge on the Material of the Electrodes". V.A. Mrazina and B.M. Myrvalid - "Information of Light Spots on the Anode of a Gas Discharge (see p 1301 of the Journal)". M.A. Smirnova - "Distribution of Binary Mixtures of Inert Gases in Spark Discharge". V.G. Stepanov and V.P. Zakharenko - "Some Phenomena in Magnified Plasma". S. Bekali - "The Possibility of Obtaining Highly Concentrated Plasmas". "Some Characteristics of the Negative Charge in an Ion Pump and in a Magnetic Ionization Vacuum Gauge". Nazarenko - "Properties of Discharge with Electron Journal". V.T. Kuchalaphko and D.K. Oscillations in a Magnetic Field (see p 1233 of the Journal). The paper by L.M. Biberon and B.A. Vaklenko considered the approximate methods for determining the concentration of atoms at the radiative levels. I.I. Sobell'man and L.A. Vaynshteyn read a paper on "A Non-stationary Theory". Spectral Lines in Plasmas. "The Broadening of Spectral Lines in Plasmas". M.A. Mrazina and S.L. Mrazina - "The Broadening of Spectral Lines in a Gas-discharge Plasma". and the Shift of Spectral Lines of Electron Collisions and the Kinetics of the Molecular Hydrogen in London (England) - "The Kinetics of the Molecular Hydrogen in London". "Some Properties of the Arc Discharge in an Inert Gas". V.K. Kolesnikov - "Some Properties of the Arc Discharge in an Inert Gas". A.A. Mak and M.A. Kachur - "Production of High Temperatures by Means of Spark Discharges". S.M. Myrvalid and G.V. Smirnitkaya - "The Characteristics of Ignition in High-vacuum in Magnetic Fields".

SMIRNITSKAYA, G.V.; REYKHUDELM', E.M.

Electric discharge with a cold cathode at low pressures in a  
magnetic field. Zhur.tekh.fiz. 29 no.2:153-162 P '59.  
(MIRA 12:4)

1. Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova.  
(Electric discharges) (Magnetic fields)

69902

S/109/60/005/04/016/028  
E140/E435

4,3150

AUTHORS: Reykhruel', E.M., Smirnitskaya, G.V. and  
Vasil'yeva, M.N.

TITLE: Certain Characteristics of Discharges in an Ion Pump  
and Magnetic Ionization Manometer

PERIODICAL: Radiotekhnika i elektronika, 1960, Vol 5, Nr 4,  
pp 662-665 (USSR)

ABSTRACT: It was shown previously (Ref 1,2) that under certain conditions a series of sharply defined ionization regions may form in a low-pressure electric discharge with cold cathode in an external magnetic field. In the present article the volt-ampere characteristics of such discharges are presented and the ion-velocity distribution close to the cathode given together with a comparison of the processes accompanying ignition of the discharge in the magnetic field with processes in a vacuum arc. Drawn-out ignition was used (Ref 3), reaching several minutes, permitting measurement of pre-breakdown currents by a pointer instrument. Slow discontinuous increases of current were observed which, at a certain value of current, lead to sharp increase of the latter and the

Card 1/2



69902

S/109/60/005/04/016/028  
E140/E435

**Certain Characteristics of Discharges in an Ion Pump and Magnetic Ionization Manometer**

ignition of the autonomous discharge. This is explained by the appearance of microdischarges and the evolution of gas with ion bombardment from the active sections of the cathode. The range of ion energies in the cathode region is approximately 250 V, occurring in several groups, confirming the existence, under certain conditions, of several ionization regions. The initial state of each breakdown in high vacuum in the presence of a cold cathode is the formation of individual emission centers on the cathode and the evolution from them of gas and metal vapor under the action of ion bombardment. There are 3 figures and 6 references, 5 of which are Soviet and 1 English.

ASSOCIATION: Fizicheskiy fakul'tet Moskovskogo gosudarstvennogo universiteta im. M.V.Lomonosova (Physics Department of Moscow State University imeni M.V.Lomonosov)

SUBMITTED: June 1, 1959  
Card 2/2

REYKHRUDEL', E.M.; SMIRNITSKAYA, G.V.; SHERETOV, E.P.

High-frequency radiation of a discharge in an ion pump with cold cathode. Radiotekh. i elektron. 7 no.10:1809-1815 0 '62.  
(MIRA 15:10)

1. Fizicheskiy fakul'tet Moskovskogo gosudarstvennogo universiteta im. M.V.Lomonosova i Ryazanskiy radiotekhnicheskiy institut.  
(Electronics)

REYKHRUDEL', E.M.; SMIRNITSKAYA, G.V.

Modern ultrahigh vacuum techniques. Zhur. tekhn. fiz. 33 no.12:  
1405-1429 D '63. (MIRA 16:12)

1. Fizicheskiy fakul'tet Moskovskogo gosudarstvennogo universiteta.

L 02277-67 EWT(1)

ACC NR: AP6025248

SOURCE CODE: UR/0057/66/036/007/1217/1225

50  
48  
B

AUTHOR: Smirnitskaya, G.V.; Babertsyan, R.P.

ORG: Physics Department, Moscow State University (Fizicheskiy fakul'tet Moskovskogo gosudarstvennogo universiteta)

TITLE: On the kinetics of the positive ions in a Penning discharge

SOURCE: Zhurnal tekhnicheskoy fiziki, v. 36, no. 7, 1217-1225

TOPIC TAGS: gas discharge, Penning discharge, ion distribution, particle trajectory

ABSTRACT: The authors have calculated ion trajectories in long- and short-anode Penning discharges, using experimentally determined potential distributions. Calculations were performed both for the case of a low pressure discharge, when space charge may be neglected, and for the case when space charge must be taken into account. For most of the calculations simple quadratic expressions were assumed for the potential as a function of the cylindrical coordinates  $r$  and  $z$  and closed expressions were obtained for the trajectories. Numerical calculations based on a slightly more complicated expression for the potential were performed for the case of a ring-anode Penning tube. The following conclusions are drawn: the ions execute complex oscillations about the axis of the discharge or, in case space charge is significant, about the radius of minimum potential, and the number of these oscillations depends on the length

Card 1/2

L 02276-67 EWT(1)  
ACC NR: AP6025249

SOURCE CODE: UR/0057/66/036/007/1226/1232

AUTHOR: Reykhruel', E.M.; Smirnitskaya, G.V.; Babertsyan, R.P.

34  
B

ORG: Physics Department, Moscow State University (Fizicheskiy fakul'tet Moskovskogo gosudarstvennogo universiteta)

TITLE: A new method for determining the potential distribution in a Penning discharge

SOURCE: Zhurnal tekhnicheskoy fiziki, v. 36, no.7, 1226-1232

TOPIC TAGS: gas discharge, Penning discharge, electric potential, potential distribution

ABSTRACT: The authors describe a new technique for determining the potential distribution in a Penning discharge, which they call the "ion-kinetic method", and present experimental data obtained by the new technique. The ion-kinetic method is based on the fact, shown by calculations of two of the present authors (ZhTF, 36, 1217, 1966/ see Abstract AP6025248/), that ions originating on certain planes perpendicular to the axis of a Penning discharge reach the center of the plane cathode at angles depending on their radii of origin. To measure the radial distribution of potential in the Penning discharge one need merely measure the energies of the ions issuing in different directions from a hole in the center of the cathode and employ the appropriate equations, which are presented but not derived in the present paper. The most

UDC: 533.9

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Card 2/2 vmb

ACC NR: AP6033264

groups that differ by 100—200 ev, which points up the existence of discrete ionization regions along both the axis and the radius of the gap; distribution of the ionization regions depends on the electrode configuration and discharge parameters; (3) At low pressures and in strong magnetic fields, emergence of electrons from the cathode central hole has been observed; this has been accompanied by formation of a dense space charge in the anode-cylinder region; this charge bucks the potential in the gap center below the cathode potential; this negative space charge abruptly cuts the discharge current. "In conclusion, the authors wish to thank E. M. Reykhrudel' for his valuable advice." Orig. art. has: 3 figures.

SUB CODE: 20 / SUBM DATE: 01Feb66 / ORIG REF: 003 / OTH REF: 003

Card 2/2

MIRNITSKAYA, N.Ye.; GRITSAY, N.I.; SEMENENKO, I.I.; MERKIN, D.R.,  
prof., doktor fiz.-mat. nauk, red.

[Experience in the production of salt-cured bacon] Opyt  
proizvodstva solenogo bekona. Moskva, TSentr. in-t nauchno-  
tekhn. informatsii pishchevoi promyshl., 1962. 44 p.  
(MIRA 17:7)

SMIRNITSKAYA, N.Ye.

Extend the standardization of meat products. Standartizatsia  
28 no.10:36 O '64. (MIRA 17:12)

1. Rukovoditel' laboratorii standartizatsii Vsesoyuznogo  
nauchno-issledovatel'skego instituta myasnoy promyshlennosti.



GRUDEV, P. I.; SMIRNITSKAYA, N. Ye.

"Objective methods of evaluation of young beef carcasses qualities by their morphological structure."

report submitted for 10th European Mtg, Meat Res Workers, <sup>A</sup>ockilde, Denmark,  
7-15 Aug 1964. <sub>r</sub>

GRUDEV, D.I., doktor sel'skokhoz. nauk; SADOVNIKOVA, N.V., starshiy nauchnyy sotrudnik; SMIRNITSKAYA, N.Ye.; KARAVAYEVA, S.G.; KOTOV, P.Ya.; RODIONOVSKIY, M.S.; KRYLOVA, N.N., kand. biol. nauk; KRASIL'NIKOVA, T.F., inzhener-khimik; SOLNTSEVA, G.L., aspirant; KUZNETSOVA, V.V., mladshiy nauchnyy sotrudnik; Prinimali uchastiye: BAZAROVA, K.I.; MALYGINA, M.I.; BUDINSKAYA, S.Z.; SINITSYNA, I.K.

Comparative evaluation of the fattening and slaughtering characteristics of Shorthorn and Kalmyk steers and physico-chemical indices of their meat. Trudy VNIIMP no.16:5-23 '64.  
(MIRA 18:11)

BRYUKHOVETS, Dmitriy Fedotovich; VASIL'YEV, A.M., kand. tekhn.  
nauk, ratsenzent; MASLOV, D.P., nauchn. red.;  
MIRNITSKAYA, O.M., red.

[Assembling and testing motor vehicles, tractors and  
motorcycles] Sborka i ispytaniia avtomobilei, traktorov  
i mototsiklov. Moskva, Vysshaia partiinaia shkola, 1965.  
361 p. (MIRA 18:9)

SMIRNITSKAYA, V.N.; SOKOLOV, I.I.

Using the linear programming method for planning the loading  
of papermaking machinery. Trudy LIEI no.53:120-130 '65.  
(MIRA 18:8)

IVANOVA, Ye.P.; SMIRNITSKAYA, V.N.

The Crout method for solving systems of linear equations.  
Trudy LEI no.53:147-157 '65. (MIRA 18:8)

SOV/110-58-7-1/21

AUTHOR: Voznesenskiy, S.D., Engineer, Smirnitskaya, V.P., Engineer,  
and Shishkin, S.V., Engineer

TITLE: New Arc-Resisting Moulding Materials (Novyye dugostoykiye  
pressmaterialy)

PERIODICAL: Vestnik Elektropromyshlennosti, 1958, Nr 7, pp 1-6 (USSR)

ABSTRACT: The range of plastics for electrical purposes available to industry remains limited and there is particular need of arc-resisting plastics, which are often required to have high mechanical strength and to withstand moisture and heat. Besides asbestos cement products, which have poor insulating properties and low moisture-resistance, extensive use is made of moulded materials based on melamine-urea-formaldehyde resins filled with fine-grained asbestos and talc or long-grained asbestos, such as plastics VEI-11 and VEI-12. Material VEI-11 is pressed cold and shows poor mechanical strength; VEI-12, which is moulded hot, has good impact strength but poor moisture-resistance. In storage both materials soon deteriorate and become unsuitable for moulding. Other amino-plastics are K-78-51, and K-77-51, which is of similar composition. They are based on modified melamine-formaldehyde

Card 1/6

New Arc-Resisting Moulding Materials

SOV/110-58-7-1/21

resin filled with short-grained asbestos with a small quantity of organic filler. These materials are good for instruments and some other parts but have little resistance to arcing. Materials based on silicones with mineral fillings have been developed recently, and include KMK-218 and K-41-5, which are produced in small quantities and are expensive. In 1956 the Scientific Research Institute for Plastics developed arc-resisting materials grades MFK-20 (melamine-formaldehyde silicone) and MMF-55 (melamine-urea-formaldehyde). They are much better than VEI-11 & 12 in general properties and have greater arc-resistance than other urea-melamine materials, including K-78-51 and K-77-51. In developing these resins it was found that the defects of previous resins based on trimethylamine result from the fact that during the processes of polycondensation and hardening these materials generate considerable quantities of volatiles, including formaldehyde and water. The combined melamine silicone resins used in material MFK-20 improved the water-resistance, stability and moulding properties and gave high arc- and heat-resistance.

Card 2/6 The laboratories of the Scientific Research Institute of the

New Arc-Resisting Moulding Materials

SOV/110-58-7-1/21

Electrotechnical Industry investigated the properties of plastics MFK-20, MMF-55 and KMK-218 compared with those of available plastics. Technological tests on mouldings were mostly made on arc-suppression chambers of d.c. contactors. The moulding properties of the materials examined are given in Table 1 and arc-resistance data in Table 2. The resistance of the materials to arcing was determined with a.c. at 6 - 10 kV with a distance between electrodes of 8 mm and with currents of up to 30 mA. The results show that the best in this respect is KMK-218 and the worst K-78-51. The insulating properties of the materials were determined in moist conditions and also after cyclic heating and wetting. The cycling tests consisted of three cycles with a total duration of 45 days. Each cycle included 10 days thermal ageing with subsequent wetting in a moisture chamber for 5 days. During thermal ageing plastics MMF-55, MFK-20 and K-78-51 were heated to 150°C and plastics KMK-218 and K-41-5 to 200°C. The test results are given in Tables 3 & 4, from which it will be seen that only material K-78-51 retains good insulating properties after exposure to moisture. The

Card 3/6



New Arc-Resisting Moulding Materials

SOV/110-58-7-1/21

moisture-resistance was improved by 30 days thermal ageing, which apparently did not damage the materials. In addition to using electrical tests for the purpose, resistance to moisture was assessed by the amount of water absorbed by standard rods immersed for 10 days and weighed from time to time. The test results are plotted in Fig 2. The best material was K-78-51 and the worst MMF-55 and VEI-12. Technological tests on materials MFK-20 MMF-55 KMK-218 and VEI-12 were made by the Apparatus Division of the Scientific Research Institute of the Electrotechnical Industry using closed arc-suppression chambers of a single-pole d.c. contactor type KV-422 with a rated current of 200 A and voltage of 330 V. The arc is emitted through long gaps 1 mm wide. The following tests were made: verification of interruption capacity; determination of length of arc; checking of resistance to moisture. To verify the interruption capacity, the contactor was used to make and break five times rated current fifty times with a ten second interval, and then ten times rated current with a voltage of 320 V on the open contacts. The load consisted of inductance and active resistance. Examination after the tests showed

Card 4/6

New Arc-Resisting Moulding Materials

SOV/110-58-7-1/21

all the contactors to be in satisfactory condition and fit for further use. The order of resistance to charring, starting with the best, is KMK-218, MWF-55, MTK-20 and VEI-12. The method of measuring the arc length is explained and the results are given. The resistance to moisture was determined in a humidity chamber with 95-98% humidity at 20°C for 30 days. The insulation resistance between the bolts of the fixed contacts was measured before and after exposure. The results are given in Fig. 3, from which it will be seen that materials KMK-218, MTK-20, and MWF-55 were of good resistance to moisture whilst material VEI-12 deteriorates rapidly even when impregnated with paraffin wax. The following conclusions are drawn. The material that best resists arcing and heat is KMK-218, which also has good resistance to moisture and good moulding properties. It is, however, of low mechanical strength, scarce and expensive. Material K-41-5 is of higher impact strength and has good resistance to arcs and moisture but is very expensive, scarce and difficult to manufacture. Material K-78-51 has the best insulating properties and moisture resistance and good moulding properties. However,

Card 5/6

New Arc-Resisting Moulding Materials

SOV/110-58-7-1/21

it can only be used where good resistance to arcing is not required. The newly-developed materials MFK-20 and MTF-55 are better than VEI-11 & 12 in respect of resistance to arcs and heat and stability of moulding properties on storage. MFK-20 is also of better water resistance and is recommended for use in the manufacture of arc-suppression chambers for d.c. contactors for rated currents up to 200 amps, although it costs about twice as much as VEI-12. Material MTF-55 requires a little more development but is recommended for arc-suppression chambers of a.c. contactors in place of VEI-11. There are 5 tables and 3 figures.

Card 6/6

SUBMITTED: March 19, 1958.

1. Plastics--Development
2. Plastics--Physical properties

BERKAN, Ya.; ZVARGULE, A., vneshtatnyy instruktor; KHARITONOVA, V.,  
doverenyy vrach; SAVEL'YEVA, G., inzh.-tekhnolog; NIKOLAYEVA, A.,  
starshiy instruktor; SMIRNITSKAYA, Ye.; KHMLOVA, V.

Changes for the better. Okhr.truda i sots.strakh. 5 no.4:20-22  
Ap '62. (MIRA 15:4)

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g. Rigi (for Berkan). 2. Respublikanskiy sovet profsoyuzov  
Latviyskoy SSR (for Zvargule, Nikolayeva). 3. Pishchevaya  
laboratoriya g. Yurmala (for Savel'yeva). 4. Korrespondent gazety  
"Sovetskaya Latviya" (for Smirnit'skaya). 5. Spetsial'nyy  
korrespondent zhurnala "Okhrana truda i sotsial'noye strakhovaniye"  
(for Khmeleva).

(Latvia--Sanatoriums)

TROFIMENKOV, Yuriy Grigor'yevich; VOROBKOV, Lev Nikolayevich;  
SIRNITSKIY, Andrey Ivanovich; BENEDIKTOV, Aleksey  
Aleksandrovich; DURANTE, V.A., kand. tekhn. nauk,  
retsenzent;

[Field methods of studying the structural properties of  
soils] Polevye metody issledovaniia stroitel'nykh svoisty  
gruntov. Moskva, Stroiizdat, 1964. 144 p. (MIRA 17:11)

SMIRNITSKIY, B.M. [Smyrnyts'kyi, B.M.], inzh.

Our carousel-type arrangement for milking parlors. Mekh. sil'.  
hosp. 14 no.6:24-26. Je '63. (MIRA 17:3)

1. Sovkhoz "Kam'yanka", Vasilevskogo rayona, Zaporozhskoy oblasti.

8(6)

SOV/112-59-4-6913

Translation from: Referativnyy zhurnal. Elektrotehnika, 1959, Nr 4, p 71 (USSR)

AUTHOR: Smirnitskiy, M. A.

TITLE: Some Results of Testing an Ionic Exciter at the Kuybyshev Hydroelectric Power Plant

PERIODICAL: Naladochnyye i eksperim. raboty ORGRES. Nr 15, 1958, pp 117-121

ABSTRACT: The stability of power transmission from the Kuybyshev station to Moscow, via a 400-kv line, requires that under forced-excitation conditions the generator-rotor voltage reach 1,600 v and that the excitation time constant does not exceed 0.1-0.15 sec. A number of generators at the Kuybyshev station have ionic separate-type excitation which is, admittedly, simpler and better than the rotary-exciter system. Valve-tube groups are supplied by an auxiliary 3-phase generator on a common shaft with the main unit; the auxiliary-generator stator has a line-to-line voltage of 1,380 v and a tap at 460 v. The valve group supplied from the 460-v tap ensures exciting the

Card 1/2

SOV/112-59-4-6913

Some Results of Testing an Ionic Exciter at the Kuybyshev Hydroelectric . . . .

generator under normal operating conditions; the valve group supplied at 1,380 v ensures forced excitation and the generator-field discharge under emergency conditions. The generator-rotor voltage can be (valve-grid) controlled by a rotatable phase regulator (manually) or by a phase adjustable-arm bridge (automatically, by an externally-magnetized reactor). Under forced excitation conditions, the normal-operation valve group is cut off by a reverse voltage. The field discharge is achieved by turning the ionic exciter into an inverter. The excitation system can take care of all operating conditions even if one of the operating-group valves is faulty. The oscillograms supplied in the article show that the rate of voltage rise under forced-excitation conditions is as high as 60,000 v/sec. The excitation system can be so aligned that a 2,000-amp rotor current will be automatically discharged in 0.64 sec, or 5,400-amp current in 0.9 sec.

Translator's note: "valve" means a rectifying device.

N.N.V.

Card 2/2



SMIRNITSKIY, M.A., inzh.; CHASHNIK, A.I., inzh.

Adjusting the electromagnetic voltage corrector of a generator  
equipped with electronic excitation. Elek sta. 30 no.2:52-55  
F '59. (MIRA 12:3)

(Electric generators) (Electric controllers)

SMIRNITSEIY, V.A., inzhener.

Device for determining linear acceleration. Sel'khozmaschina no.10:25  
0 '56. (MLBA 9:12)

(Accelerometers)

SMIRNITSKIY, V. A.

120-2-51/37

AUTHOR: Vaysenberg, A. O., Smirnitskiy, V. A., Rabin, N. V.  
TITLE: A Microscope Stage for Particle Scattering Measurements  
in Nuclear Photoemulsions. (Mikroskopnyy Stol dlya  
Izmereniya Rasseyaniya Chastits v Yadernykh Fotoemul'-  
siyakh.)  
PERIODICAL: Pribery i Tekhnika Eksperimenta, 1957, No. 2,  
pp. 112 - 114 (USSR).  
ABSTRACT: The development of the photoemulsion cameras has lead  
to an increase in the track lengths which can be observed,  
an increase in the statistical accuracy of scattering  
measurements, and the independence of experimental results  
from the degree of development of the emulsion. Among the  
factors which determine the accuracy of scattering measure-  
ments, the most important are those due to the noise which  
exists because of the finite grain size and intervals  
between them, to the noise introduced by distortion, and  
to the noise due to the microscope stage, the longitudinal  
displacement of which is accompanied by small transverse  
displacements equivalent to scattering. It was required  
to have a microscope bench with longitudinal movement of  
a few cm and with not more than 0.01 micron of the trans-  
verse displacement. The present type of the "sprung  
Card 1/3 action" microscope bench is due to Cosyns (Ref. 1) and this

120-131/57

A Microscope Stage for Particle Scattering Measurements in Nuclear Photoemulsions.

principle is also used in the KOPHIKA M-52 bench. The bench has the following drawbacks: springs have to be accurately calibrated, it is temperature and load sensitive and its noise increases at large displacements. Since a glass surface can be prepared to a very great accuracy, the authors have constructed, and now describe, a microscope bench using two accurately prepared glass plates as guides. The action of the bench can be clearly seen from Figure 1, where 1 is a heavy steel plate with two steel blocks covered by the above glass plates acting as buffers and guides. The "noise" of the bench has been measured by means of the Michelson interferometer with results given in Figure 3, where the abscissa represents the magnitude of the displacement and the ordinate the mean value of the second order differences (curve A), which represents a "noise" of 0.005 micron for the displacement of 50 to 100 microns. In the same figure curve B represents the noise of the KOPHIKA-M 52 of Gottstein (Ref. 3). Two photographs of the bench assembly and two graphs of experimental results are given. There are three references, none of which is Slavic.

Card 2/3

SMIRNITSKIY, V.A., inzhener.

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Devices for measuring traction and torque. Sel'khoz mashina no.7:7-8  
Jl '57. (MLBA 10:8)

(Engineering instruments)

SMIRNITSKIY, V. H.

AUTHOR VAYSENBERG, A.O., SMIRNITSKIY, V.A. 56-4-15/52

TITLE The Meson Decay of a Tritium Hyperfragment.  
(Mezcmnyy raspad tritiyevogo giperoskolka -Russian)

PERIODICAL Zhurnal Eksperim. i Teoret.Fiziki, 1957, Vol 32, Nr 4, pp 736-737 (USSR)

ABSTRACT During the systematic examination of Ilford G-5 emulsion layers (exposed to radiation in an emulsion chamber for eight hours in an altitude of 25 km in Italy in the fall of 1955) put at their disposal by Prof. Powell, the authors of the paper under review discovered a mesonic decay of a tritium hyperfragment, with a negative pion being retarded in the emulsion. This case is being mentioned in the paper under review for the purpose of supplementing the relevant statistical data. From the primary star of the type  $10+0_n$  (reproduced in the paper under review) a slow simply charged particle hf is emitted. This particle is stopped in the same layer and it forms a secondary star with three rays. The range of hf amounts to  $360\mu$  and on basis of the range) is larger than the mass of the proton. Also the estimate on basis of scattering and range yields a value that is larger than the proton mass. The charge of hf, as determined on basis of the number of interruptions, on basis of the range, and on basis of the thickness of the trace, equals 1. At the secondary star two particles with short ranges have equal ranges, namely  $12 \pm 0.6\mu$ . The estimate of the charge yields  $z=1$ . Trace 3 belongs to a negative pion with the range of  $15,700\mu$ . This negative pion penetrated eight layers of emulsion and produced at the end of its range a

Card 1/2

AUTHOR

VAKSENBERG, A.O., SMIRNITSKIY, V.A.

56-6-11/56

TITLE

Investigation of Correlations in  $\pi \rightarrow \mu \rightarrow e$  - Decays(Issledovaniye korrelyatsiy pri  $\pi \rightarrow \mu \rightarrow e$  raspadakh. Russian)

PERIODICAL

Zhurnal Eksperim. i Teoret. Fiziki, 1957, Vol 32, Nr 6, pp 1340 - 1343  
(U.S.S.R.)

ABSTRACT

In the present paper the energies resulting from the  $\pi^+ \rightarrow \mu^+ \rightarrow e^+$  - decay in a photoemulsion are measured of the positrons and the angles between the flying-off direction of the positrons and myons. The authors up to now investigated 2334  $\pi - \mu$ -acts of decay which were observed on the occasion of the systematical inspection of the part of the emulsion chamber recorded by Prof. POWELL. This emulsion chamber was irradiated at a height of 28 km.

The traces of the positrons and myons enclose with the emulsion plane only small angles. It is therefore possible, without committing grave errors, to refer the correlation to particles, the traces of which are located in the emulsion plane. The spectrum measured here of the positrons produced on the occasion of the decay is shown in a diagram. In this spectrum the particles with an energy of more than 40 MeV are investigated, the emission direction of which includes small angles together with the flying-off direction of the myon. The corresponding data are shown in a table. The front-rear asymmetry in the case of small angles is extraordinarily high, but decreases in the case of a decrease

Card 1/2

Investigation of Correlations in  $\pi \rightarrow \mu \rightarrow e$  - Decays 56-6-11/56

of the angular aperture. The amount of this asymmetry agrees well with its theoretical value. When taking account of all angles ( $0 - 90^\circ$  and  $90 - 180^\circ$ ) the asymmetry effects decrease but are still easily observable. From a diagram shown here the following conclusions are drawn:

- 1.) Towards the front 54 positrons were emitted, and 66 towards the rear.
- 2.) The share of the positrons flying off in the rear direction increases considerably at an increase of the energies from 25 to 40 MeV.
- 3.) From the particles with an energy of more than 55 MeV, 9 flew off in the rear direction and only 2 in the frontal direction.

In conclusion the data obtained here are compared with a theoretical curve. Attention is drawn in short to the differences (apparently connected with the depolarization) between experiment and theory. (With 2 illustrations and 1 table).

ASSOCIATION

Academy of Science of the U.S.S.R.  
(Akademiya Nauk SSSR)

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Card 2/2



SMIRNITSKIY, B.A.

C-3

USSR/Nuclear Physics - Elementary Particles.

Abs Jour : Referat Zhur - Fizika, No 1, 1958, 344

Author : Vaysenberg, A.O., Smirnitkiy, B.A.

Inst : Academy of Sciences, USSR.

Title : Investigation of the Correlations in  $\pi \rightarrow \mu \rightarrow e$  decays.

Orig Pub : Zh. eksperim. i teor. fiziki, 1957, 52, No 6, 1340-1343

Abstract : Measurements were made of the energies of 120 positions from  $\pi \rightarrow \mu \rightarrow e$  decay in photoemulsion and the angles between the tracks of the  $\mu$  meson and the positron. It is shown that the distributions obtained are in qualitative agreement with the theory of the two-component neutrino. A value  $\alpha\lambda = 0.50 \pm 0.25$  was obtained for the product of the parameter of this theory,  $\lambda$ , by the relative number  $\alpha$  of  $\mu$  mesons that do not experience depolarization in the emulsion.

Card 1/1

SAMOYLOVICH, D. M., SMIRNITSKIY, V. A., SUKHOV, S. A., RYABOV, V. D. and RULEV, A. V.

"Appareil Pour Le Developpement Semi-Automatique Des Grands Empilements  
D'emulsion Nucleaire."

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

Encl: B-3,114,647.

SMIRNITSKIY, V. A. and VEYSBERG, A. O.

"Investigation of Asymmetry of  $\pi^+ \rightarrow \mu^+ \rightarrow e^+$  Decays in Photographic Emulsions,"  
Nuclear Physics, Vol. 5, No. 1, Jan '58 (North Holland Publ. Co., Amsterdam) pp.33-40

Academy of Sciences, USSR, Moscow

Abstract: The energy dependence of the angular distribution of positons relative to the direction of emission of  $\mu^+$  mesons produced in  $\pi^+ \rightarrow \mu^+ \rightarrow e^+$  decays is studied in photographic emulsions.

24(5)

AUTHORS: Vaynsberg, A. G., Smirnitskiy, ~~V. A.~~, SOV/56-35-3-13/61  
 Kolganova, E. D., Minervina, Z. V., Pesotskaya, Ye. A.,  
 Rabin, N. V.

TITLE: Angular Correlations for Positrons of Low Energy in  
 $\pi^+-\mu^+-e^+$  Decay (Uglovaya korrelyatsiya dlya pozitronov maloy  
 energii pri  $\pi^+-\mu^+-e^+$ -raspade)

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1958,  
 Vol 35, Nr 3, pp 645 - 648 (USSR)

ABSTRACT: After the discovery of the nonconservation of parity  
 with weak interaction, several groups of research scientists  
 investigated the energy dependence of the angular correlation  
 of positrons in  $\pi^+-\mu^+-e^+$  decay (Refs 1-3); according  
 to Mukhin, Ozerov and Pontekorvo (Ref 4) the connection  
 between asymmetry and energy corresponds to the laws  
 of the two-component theory, according to which the  
 formula (1)

$$\cos \vartheta = \frac{\alpha \lambda}{3} \frac{2\varepsilon - 1}{3 - 2\varepsilon} \text{ applies, where } \vartheta \text{ denotes the angle}$$

Card 1/4

Angular Correlations for Positrons of Low Energy in  
 $\pi^+-\mu^+-e^+$  Decay

SOV/56-35-3-13/61

between the direction of myon spin and the direction of the emission of the positron in  $\mu^+-e^+$  decay.  $\epsilon$  denotes the energy of positrons in units of its maximum energy,  $\lambda$  - a parameter of the theory (which is determined from the ratio between interaction constants),  $\alpha$  - a coefficient which shows what part of myons is polarized at the instant of decay. In the present paper the correlation was not investigated in space, but in the plane, so that the formula used here for  $\cos \theta$  is distinguished from (1) by the fact that the first factor of the right side is  $\alpha\lambda/2$ . A photo-emulsion plate 'NIKFI-R' of 400 $\mu$  thickness was used for the investigations; it was exposed to a  $\pi^+$ -meson beam of the synchrocyclotron of the OIYaI (Ob'yedinenny institut yadernykh issledovaniy = United Institute for Nuclear Research)(cf. also reference 2). Results are, essentially, given in two tables.

1) Series of measurements, 1099 positron traces:

Card 2/4

Angular Correlations for Positrons of Low Energy in  $\pi^+-\mu^+-e^+$  Decay

SOV/56-35-3-13/61

$\theta$	number of particles n	$\epsilon: 0-0,3$	$0,3-0,6$	$0,6-0,9$	$0,9$
$0-180^\circ$		46	333	440	280
$0-60^\circ$	$\frac{n}{\cos \theta} \pm 0,7/\sqrt{n}$	$+0,18 \pm 0,10$	$0,00 \pm 0,04$	$-0,05 \pm 0,03$	$-0,09 \pm 0,04$
$120-180^\circ$	$\frac{n}{\cos \theta} \pm 0,85/\sqrt{n}$	$+0,30 \pm 0,15$	$0,00 \pm 0,06$	$-0,06 \pm 0,05$	$-0,16 \pm 0,06$

2. Series of measurements, 8000  $\pi^+-\mu^+-e^+$  decay events, of which 200 with  $\epsilon < 0,3$

$\theta$	n	$\epsilon: 0-0,3$	$0,3-0,6$
$0-180^\circ$		201	499
$0-60^\circ$	$\frac{n}{\cos \theta}$	$0,07 \pm 0,05$	$0,01 \pm 0,03$
$120-180^\circ$	$\frac{n}{\cos \theta}$	$0,13 \pm 0,07$	$0,01 \pm 0,05$

( $\theta$  is the angle between the direction of emission of the myon and that of the positron). Similar measurements have recently been carried out by Pershin et al (Ref 7) in the propane-bubble-chamber. The authors in conclusion thank A.I. Alikhanov for his interest in this work

Card 3/4

Angular Correlations for Positrons of Low Energy in  
 $\pi^+-\mu^+-e^+$  Decay

SOV/56-35-3-13/61

and A.P.Birzgal for calculations. Moreover, they express their gratitude to the collaborators of the testing group for evaluating a large number of plates. There are 2 tables and 7 references, 5 of which are Soviet.

SUBMITTED: May 31, 1958

Card 4/4

SOV/120-59-4-11/50

AUTHORS: Samoylovich, D. M., ~~Smirnitkiz, V. A.~~, Sukhov, S. A.,  
Ryabov, V. D., Ruliev, A. V.

TITLE: An Installation for the Semi-Automatic Photographic Pro-  
cessing of Large Emulsion Stacks

PERIODICAL: Pribory i tekhnika eksperimenta, 1959, Nr 4, pp 58-62  
(USSR)

ABSTRACT: This large scale and elaborate apparatus may be used to  
develop and fix a 4 litre stack in 4 to 6 days. The work-  
ing area of the developing apparatus is  $2\text{m}^2$  and of the fix-  
ing apparatus  $10\text{m}^2$ . Five hundred emulsions each  $400\ \mu$  thick  
may be developed in 2 to 3 days, while the fixing takes 45 to  
50 hours or 75 to 80 hours, depending on whether the emulsions  
are glass-backed or not. The entire installation occupies an  
area of  $200\text{m}^2$ . Various gadgets are described, such as  
thermostated containers, plate holders, special fixing dishes,  
etc. The basic process of development and fixing employed is

Card 1/2



21(8)

AUTHORS:

Vaysenberg, A. O., Smirnitkiy, V. A. SOV/56-36-1-56/62

TITLE:

The Decay of a Beryllium Hyperfragment (Raspad berilliyevogo giperoskolka)

PERIODICAL:

Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1959, Vol 36, Nr 1, pp 333-335 (USSR)

ABSTRACT:

By systematical scanning of layers of the emulsion Ilford G=5 irradiated in an altitude of  $\sim 25$  km, the authors detected a non-meson-decay of a beryllium hyperfragment which permits relatively precise measurement of the binding energy of the  $\Lambda^0$ -particle. A slow hyperfragment is emitted from a primary star of the type  $12 + 4p$ . It is stopped in the same layer and causes a secondary three-ray star. The range of the hyperfragment amounts to  $60 \mu$ . An estimation of the charge by comparing the thickness of the hyperfragment track with the thickness of the tracks of the  $\text{Be}^8$  hyperfragments and of  $\alpha$ -particles (which were produced in the decay of  $\text{Be}^8$ ) gives  $Z \sim 4$ . Analogous estimations were carried out for the other tracks. The authors suggest the decay scheme  $\Lambda^0 \text{Be}^8 \rightarrow \text{He}^4 + d + p + n + Q$ ,

Card 1/2

## The Decay of a Beryllium Hyperfragment

SOV/56-36-1-56/62

$Q = (160.0 \pm 1.3)$  Mev. For the binding energy of  $\Lambda^0$  in the nucleus  $\text{Be}^8$  the value  $B_{\Lambda^0} = (8.2 \pm 1.6)$  Mev is found. The values measured of  $B_{\Lambda^0}$  for the hitherto known decays of  $\Lambda^0 \text{Be}^8$  are equal to  $3.7 \pm 3$ ;  $0 \pm 5$ ;  $9.3$  or  $6.6$  (depending on the decay scheme);  $5.9 \pm 0.5$  (meson decay). The 3 schemes  $\Lambda^0 \text{Be}^9 \rightarrow \text{He}^5 + d + p + n + Q$ ;  $\Lambda^0 \text{Be}^8 \rightarrow \text{He}^3 + \text{H}^3 + p + n + Q$ ;  $\Lambda^0 \text{Be}^9 \rightarrow \text{He}^4 + \text{H}^3 + p + n + Q$  can be excluded since they give high negative values of  $B_{\Lambda^0}$ . The decay schemes with several neutral particles cannot be excluded from being considered, but they are less probable. There are 1 figure and 7 references, 1 of which is Soviet.

SUBMITTED: October 8, 1958

Card 2/2

SOV/56-36-6-8/66

21(7)  
AUTHORS: Vaysenberg, A. O., Rabin, N. V., Smirnitskiy, V. A.

TITLE: The Depolarization of  $\mu^+$ -Mesons in Nuclear Emulsions (Depolyarizatsiya  $\mu^+$ -mezonov v yadernoy emul'sii)

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1959, Vol 36, Nr 6, pp 1680 - 1686 (USSR)

ABSTRACT: The present paper intends to determine exact values of the asymmetry coefficients in the spatial distribution of positrons from the reaction  $\pi^+ - \mu^+ - e^+$  in nuclear emulsions; the author carried out a comparative investigation of ordinary and double-diluted NIKFI-R-emulsions as well as Ilford G-5; among other things, they investigated 9101  $\pi^+ - \mu^+ - e^+$ -decays in NIKFI-R emulsions; irradiation was carried out on the synchrocyclotron of the OIYaI (Joint Institute of Nuclear Research). The following decays were selected for investigation: 1) such having an electron trace length of  $\geq 1$  mm, 2) with a distance of the vertex of the decay from the emulsion surface of the glass  $>100\mu$ . Table 1 shows the angular distribution of the measured decays for  $0 < \vartheta < 180^\circ$  ( $\vartheta$  is the angle between the primary  $\mu$ -trace and the  $e^+$ -trace in the emulsion plane). The asymmetry coefficient  $a$  may be determined either from the

Card 1/3

The Depolarization of  $\mu^+$ -Mesons in Nuclear Emulsions

SOV/56-36-6-8/66

average value  $\cos \theta$  or from the forward-backward difference. It is found, with correction, that  $a = -0.66 \pm 0.018$ . Gurevich et al. (Ref 4) obtained from an analysis of 8990 decays in NIKFI-R  $a = -0.092 \pm 0.018$ , Ivanov and Fesenko (Ref 5) obtained the value  $a = -0.065 \pm 0.041$ ; for NIKFI-R an average value of  $a = -0.077 \pm 0.012$  is thus obtained. Table 2 compares the a-values in Ilford G-5 and NIKFI-R obtained from various publications; the mesons originate partly from cosmic radiation, and partly from accelerators. For Ilford G-5 the average values  $a = -0.139 \pm 0.014$  (from all data),  $a = 0.133 \pm 0.018$  (cosmic radiation) and  $a = 0.148 \pm 0.021$  (accelerators) are obtained. In all cases the NIKFI-R-emulsions have a considerably smaller asymmetry coefficient. The ratio between the depolarizability of NIKFI and Ilford is found to amount to  $(0.139 \pm 0.014) / (0.077 \pm 0.012) = 1.81 \pm 0.33$ . Further, the results obtained by investigating doubly-diluted Ilford G-5 and NIKFI-R emulsions are published. For the former other authors obtained  $a = -0.190 \pm 0.033$  for the latter  $-0.136 \pm 0.037$  and  $-0.118 \pm 0.041$ , which results in an average value of  $-0.127 \pm 0.028$ . The ratio between the a-values of doubly-diluted NIKFI (with gelatin) and normal NIKFI is found to amount to  $1.65 \pm 0.40$ . Further

Card 2/3

The Depolarization of  $\mu^+$ -Mesons in Nuclear Emulsions SOV/56-36-6-8/66

data concern  $\alpha$ -measurements in NIKFI-R in strong magnetic fields. The following was obtained:  $\alpha(2500 \text{ G}) = -0.186 \pm 0.020$  and  $\alpha(17000 \text{ G}) = -0.28 \pm 0.02$ . The authors finally thank A. I. Alikhanov and I. I. Gurevich for their interest and discussions, further Ye. A. Pesotskaya and Z. V. Minervina for their help in evaluating results, B. A. Nikol'skiy for his assistance in irradiating the emulsions in the magnetic field, and D. M. Samoylovich, in whose laboratory the emulsion layers were developed. There are 3 tables and 21 references, 7 of which are Soviet.

ASSOCIATION: Institut teoreticheskoy i eksperimental'noy fiziki Akademii nauk SSSR ( Institute for Theoretical and Experimental Physics of the Academy of Sciences, USSR)

SUBMITTED: January 7, 1959

Card 3/3

21 (7)

## AUTHORS:

Vaysenberg, A. O., Smirnitskiy, V. A., SOV/56-37-1-63/64  
Kolganova, E. D., Rabin, N. V.

## TITLE:

The Energy Dependence of the Spatial Asymmetry of Positrons in  
 $\pi^+ \rightarrow \mu^+ \rightarrow e^+$  Decay (Zavisimost' ot energii prostranstvennoy asim-  
metrii pozitronov pri  $\pi^+ \rightarrow \mu^+ \rightarrow e^+$ -raspade)

## PERIODICAL:

Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1959, Vol 37,  
Nr 1, pp 326 - 328 (USSR)

## ABSTRACT:

The present "Letter to the Editor" is a continuation of a number of other works (Refs 1-3). The asymmetry coefficient  $a$  of this reaction was determined according to the equation  $dN = (1 + a \cos \vartheta) d\Omega(\vartheta)$  ( $\vartheta$  - angle between the direction of the departure of muon and electron,  $d\Omega$  - solid angle element) as amounting to  $0.077 \pm 0.012$  for NIKFI-R emulsions;  $a$  increases to  $0.28 \pm 0.02$  if the emulsion is located in a magnetic field of 17 kG. The data are mean values obtained by measurements of the entire spectrum. Investigations of the energy dependence of  $a$  were carried out by means of a NIKFI-R photoemulsion pile in the perpendicular magnetic field of 17 kG; irradiation was carried out on the synchrocyclotron of the OIYaI (Joint Institute of Nuclear

Card 1/3

The Energy Dependence of the Spatial Asymmetry of Positrons in  $\pi^+ \rightarrow \mu^+ \rightarrow e^+$  Decay

SOV/56-37-1-63/64

Research). Positron energy was measured by means of the method of multiple scattering, for which purpose the microscopes Kornitska MS-2 and MBI-9 were used. Part of the measurements was carried out by means of a semiautomatic device. 565 traces were selected according to certain criteria, which are enumerated. Under these conditions it holds that  $a(\mathcal{E}) = 1.27 \frac{N_f - N_b}{N_f + N_b} \pm \frac{1.27^2 - a^2(\mathcal{E})}{\sqrt{N_f + N_b}}$ , where  $N_f$  denotes the number of forward decays,

$N_b$  the number of backward decays. The  $N_f$  and  $N_b$  are given in a table for 10 energy intervals between 0 and 1.1. A diagram shows the dependence of  $a(\mathcal{E})$  on the positron energy  $\mathcal{E}$ . The drawn-in curve represents  $a(\mathcal{E})$  according to the theory of the two-component neutrino:  $a(\mathcal{E}) = 3.0.28(1-2\mathcal{E})/(2\mathcal{E}-3)$ ; (here  $0.28 \pm 0.02$  is the value of the asymmetry coefficient at 17 kG). The dotted curves show the energy dependence of  $a$  obtained from the statistical errors of energy measurement and from the bremsstrahlung in experimental conditions (upper curve: 10% dispersion

Card 2/3

The Energy Dependence of the Spatial Asymmetry of  
Positrons in  $\pi^+ \rightarrow \mu^+ \rightarrow e^+$  Decay

SOV/56-37-1-63/64

and 4 mm track length, lower curve: 20% dispersion and 1 mm track length). The differential spectrum of  $a(\epsilon)$  obtained expresses the rapid growth with energy and agrees with the two-component neutrino theory. In an earlier paper (Ref 2) the authors also worked with NIKFI-R photoemulsions ( $a = -0.077 \pm 0.012$ ), and within the energy range of 0 - 0.3 they obtained the average value of  $a = +0.14 \pm 0.10$ . (In the case of the measurements published, the measured  $a$ -values are all within the positive range, and the theoretical curves intersect the  $\epsilon$ -axis at about 0.4 - 0.5). The authors finally thank Z. V. Minervin and Ye. A. Pesotskaya, and D. M. Samoylovich and B. A. Nikol'skiy for taking part in the experiments. There are 1 figure, 1 table, and 3 Soviet references.

SUBMITTED: May 7, 1959

Card 3/3



83167  
S/056/60/039/002/004/044  
B006/B056

24.6900  
AUTHORS:

Vaysenberg, A. O., Smirnitskiy, V. A.

TITLE:

Asymmetry in the  $\pi^+ - \mu^+ - e^+$  Decay in a Magnetic Field  
79

PERIODICAL:

Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1960,  
Vol. 39, No. 2 (8), pp. 242-248

TEXT: It was the purpose of the present paper to investigate the dependence of the asymmetry coefficient of the above reaction in photoemulsions of the type НИКФИ-Р (NIKFI-R) on the magnetic field strength in the range of 0 - 20 koe. The asymmetry coefficients were measured at  $H = 0, 54, 110, 206, 420, 680, 1300, 1900, 2500, 3500, 5100, 6300, 14,000$  and  $17,000$  oe, where  $\vec{H}$  was parallel to the emulsion plane. For shielding the field in the synchrocyclotron room, a double soft-iron shield was used. The magnetic fields in which asymmetry was measured, were generated by an electromagnetic. The authors thank I. I. Gurevich and B. A. Nikol'skiy for placing a special electromagnet at their disposal for the purpose of producing the 14- and 17-koe fields. The

Card 1/3

Asymmetry in the  $\pi^+ - \mu^+ - e^+$  Decay  
in a Magnetic Field

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S/056/60/039/002/004/044  
B006/B056

emulsion chambers consisted of 50 to 100 400- $\mu$  NIKFI-R layers, which had been bombarded with  $\pi^+$ -mesons on the synchrocyclotron of the OIYaI (Joint Institute of Nuclear Research). The asymmetry coefficient  $a$  is calculated from the relation  $a = K(N_V - N_N)/(N_V + N_N)$ , where  $N_V$  denotes the number of decays for which the projection of  $\gamma$  and  $\beta$  lay in one quadrant of the ocular scale (the first or third),  $N_N$  denotes the number of decays where these projections lay in the opposite quadrant.  $\gamma$  and  $\beta$  are the angles formed by  $\vec{H}$  and the emission directions of  $\mu^+$  and  $e^+$ , respectively. In first approximation, which is accurate up to some %,  $K = 1.57$ . The results of these investigations are shown in Tables and in a diagram, and are the following: 1.  $a$  grows from  $-0.09 \pm 0.01$  ( $H=0$ ) to  $-0.29 \pm 0.01$  ( $H = 17 - 27$  koe). 2. In the range of 0-17 koe, the course of the  $a(H)$  curve is such that  $a$  is not proportional to  $x^2/(1+x^2)$  (see Fig.) as would be expected to follow from the polarization formula for the Paschen-Back effect in muonium; ( $x = H/H_0$ ,  $H_0 = 1580$  oe, - the mean field produced by the magnetic moment of the  $\mu^+$ -meson on the electron orbit in muonium). 3. The observed effect may, however, be explained by the

4

Card 2/3

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S/056/60/039/005/004/051  
B029/B077

24.6900

AUTHORS: Vaysenberg, A. O., Kolganova, E. D., Smirnitskiy, V. A.

TITLE: Study of the Asymmetry in the Decay of Negative Muons in a Nuclear Emulsion

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1960, Vol. 39, No. 5(11), pp. 1198 - 1200

TEXT: P. M. Shmushkevich (Ref.2) and V. A. Dzhrbashvan (Ref.3) showed that negative muons lose most of their polarization in mesic atoms during cascade transitions. This agrees with experimental values of A. E. Ignatenko et al. (Ref.4). The authors determined the coefficient of asymmetry of the  $\mu^- \rightarrow e^-$  decay in a nuclear emulsion without a magnetic field ( $H < 0.1$  oe) and in a strong magnetic field ( $H = 11$  koe) parallel to the negative muon beam. Emulsion films of the type НИКФИ-Р (NIKFI-R) were bombarded with a negative muon beam in the synchrocyclotron of OIYaI (Joint Institute of Nuclear Research). The initial polarization of the negative muons probably does not differ considerably from the polarization of the positive muons, which according to

Card 1/3

86890

Study of the Asymmetry in the Decay of  
Negative Muons in a Nuclear Emulsion

S/056/60/039/005/004/051  
B029/B077

A. I. Mukhin, Ye. B. Ozerov, and B. Pontekorvo (Ref.5), is  $0.81 \pm 0.11$ . The distribution of decay electrons with respect to the direction of the negative muon beam is described by a relation of the form  $1 + a \cos \psi$ . The authors observed a total of 9279 decays without applying a magnetic field, and 3403 decays in a magnetic field of 11 koe. Conditions and results of measurements are given in the following table:

Magnetic field strength H	$< 10^{-1}$ oe	11 koe
backward	4580	1707
Number of decays		
forward	4699	1696
Coefficient of asymmetry	$+0.02 \pm 0.017$	$0.00 \pm 0.025$
Number of observers	6	14
Consistency	$\chi^2 \sim 8$	$\chi^2 \sim 25$

Within the limits of the statistical error there is no noticeable asymmetry, and the magnetic field has no influence on the asymmetry, either. The negative muons are slowed down by the light (C,N,O) and heavy components (Ag,Br) of the emulsion with about the same frequency.

Card 2/3

86890

Study of the Asymmetry in the Decay of  
Negative Muons in a Nuclear Emulsion

S/056/60/039/005/004/051  
B029/B077

There is fairly good agreement between the results of several observers, especially for  $H = 0$ . Further measurements did not establish a noticeable asymmetry either. For  $H = 11$  koe,  $a = 2 \cos \psi \pm 1.57/\sqrt{N}$  increases slightly at the end of the spectrum. There is practically no asymmetry in the decay of negative muons in a nuclear emulsion of the type NIKFI-R, independently of the external magnetic field. Thus, it is impossible to use the method of photoemulsions when observing such secondary effects which are related to the polarization of negative muons, such as the asymmetric emission of protons in stars which appear during the absorption of negative muons by a nucleus, and also the asymmetric departure of electrons from  $\beta$  active recoil nuclei which are created by such an absorption. The authors thank N. V. Rabin and Ye. A. Pesotskaya for assisting in the measurements. There are 1 figure, 1 table, and 7 references: 5 Soviet, 1 US, and 1 Dutch. ✓

SUBMITTED: May 28, 1960

Card 3/3

VAYSENBERG, A.O.; PESOTSKAYA, Ye.A.; SMIRNITSKIY, V.A.

Electron spectra emitted in the decay of negative  $K^-$ -mesons in a  
nuclear emulsion. Zhur. eksp. i teor. fiz. 41 no. 4:1031-1036 0 '61.  
(MIRA 14:10)

(Mesons--Decay) (Photography, Particle track)

VAYSENBERG, A.O.; SMIRNITSKIY, V.A.

Semiautomatic unit for measuring multiple scattering. Prib.i  
tekh. eksp. 6 no. 5:44-47 S=0 '61. (MIRA 14:10)  
(Particles (Nuclear physics)---Scattering---Measurement)

VAYSENBERG, A.G.; SMIRNITSKIY, V.A.; KCLGANCVA, E.D.

Study of the electron spectrum and asymmetry resulting from  
 $\pi^-$ - $\mu^-$ -e-decay in a nuclear photoemulsion. Zhur. eksp. i teor.  
fiz. 40 no.4:1042-1049 Ap '61. (MIRA 14:7)  
(Mesons--Decay) (Electrons)



40745

S/120/62/000/004/011/047  
E140/E420

AUTHORS:

Vladimirskiy, V.V., Koshkarev, D.G., Onosovskiy, K.K.,  
Smolyankina, T.G., Smirnit'skiy, V.A., Danil'tsev, Ye.N.,  
Lazarev, N.V., Lapitskiy, Yu.Ya., Pligin, Yu.S.,  
Batalin, V.A.

TITLE:

The ion guide and beam-introduction system of the  
proton synchrotron

PERIODICAL: Pribory i tekhnika eksperimenta, no.4, 1962, 70-75

TEXT: From experimental work on the 4 Mev electrostatic generator  
used for beam injection, it was found that the diameter of the  
matched beam in the accelerator chamber would be not less than  
about 25 mm. The injection system was therefore designed to use  
plane condensers instead of slot condensers. As the phase volume  
of the beam was four times greater than expected, the focusing was  
strengthened by the use of quadropole lenses. The beam  
introduction system is shown in Fig.2, where C<sub>1,2,3</sub> are  
condensers. C<sub>1</sub> is constructed from stainless steel plates,  
ℓ = 600 mm, h = 35 mm, bent to a radius of 4000 mm,  
V = 80 kV, ω = 171 mr, ΔV/V = 1.5 x 10<sup>-3</sup>.

Card 1/3

SMIRNITSKIY, V.A., inzh.; KLISHIN, G.A.

Apparatus for measuring the speed of grain movement on a  
sieve with the application of radioactive isotopes. Trudy  
VISKHOMa no.34:23-33 '62. (MIRA 16:11)

VLADIMIRSKIY, V.V.; KOSHKAREV, D.G.; ONOSOVSKIY, K.K.;  
SMOLYANKINA, T.G.; SMIRNITSKIY, V.A.; DANIL'TEV, Ye.N.;  
LAZAREV, N.V.; LAPITSKIY, Yu.Ya.; FLIGIN, Yu.S.; BATALIN, V.A.

Ion guide and beam injection system in a proton synchrotron.  
Prib. i tekhn. eksp. 7 no.4:70-75 J1-Ag '62. (MIRA 16:4)

1. Institut teoreticheskoy i eksperimental'noy fiziki Gosu-  
darstvennogo komiteta po ispol'zovaniyu atomnoy energii SSSR.  
(Synchrotron)

L 64750-65 ENT(m)/S/SWA(m)-2

ACCESSION NR: AP5016553

UR/0056/65/048/006/1604/1610

AUTHORS: Vaysenberg, A.O.; Smirnitkiy, V.A.

TITLE: Muon polarization and the ratio of form factors in  $K^+_{\mu 3}$  decay

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 48, no. 6, 1965, 1604-1610

TOPIC TAGS: muon, K meson, meson polarization

ABSTRACT: This work is a continuation of a preliminary experiment (Phys. Rev. Letters v. 12, 233, 1964), in which the statistics were poorer. In order to check on the correct value of the form factor ratio by comparing the theoretical and experimental values of the probability ratio for  $K_{\mu 3}$  and  $K_{e 3}$  decays, the authors measured the angular distribution of positrons for 887 positive muons from  $K^+_{\mu 3}$  decay, as well as the  $\mu^+$ -meson longitudinal polarization. The meas-

Card 1/2