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5

Physicochemical study of oil fractions from crude oil. I. Method and experimental technique. V. Kello, V. Palo, and A. Tkáč (Slovenská vysoká škola ~~technická~~, Bratislava, Czech.). *Chem. zvesti* 13, 265–71 (1959) (German summary). —Lubricating oil distillates from Gbely (Slovakia) crude oil were evaluated as raw materials for cable oil by means of the *n*-d.-mol. wt. method, elementary analysis, viscosity and viscosity index, dielec. losses and dielec. const., insulating properties, and infrared absorption spectroscopy. All tests were applied to chromatographic fractions of the distillates. For kinetic studies by infrared spectroscopy, oxidation of a thin hydrocarbon layer (1 mm.) was used. Jan Micka

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KELLO, V.

Distr: 4E2c(j)/4E3b

Mean life of free radicals in solid natural rubber. A. Tkáč and V. Kellö (Slovakian Coll. Technol., Bratislava, Czech.). *Trans. Faraday Soc.* 55, 1211-20(1959); cf. *C.A.* 49, 6039h; 50, 5317i, 16337d.—Free radicals were generated in solid films of natural rubber 20–30 μ thick on NaCl plates when heated in an autoclave for ~1000 min. at 140°. The mean life of the free radical was detd. by a kinetic analysis of the subsequent oxidn. reactions. Radicals of relatively long life formed only in the presence of natural antioxidants. In the absence of antioxidants, heat-treatment reduced the sensitivity towards oxidn., a result which was explained by cross-linking with rapid removal of the radicals.
Victor R. Deitz

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1

KRCMERY, Vladimir; FERENCIK, Miroslav; KELLO, Vojtech

Activity of the hydroperoxydases in brucellosis. Biologia 14 no.12: 924-932 '59. (EEAI 9:7)

1. Statny vedecky veterinarni ustav, Bratislava a Katedra fyzikalnej chemie Slovenskej vysokej skoly technickej, Bratislava
(BRUCELLOSIS)
(HYDROPEROXIDASES)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1

TKAC, Alexander, doc., dr., inz.; KELLO, Vojtech, prof., dr.

Problem of polyisoprene stability from the viewpoint of radical processes. Chem zvesti 17 no.4:237-247 '63.

1. Vedecky ustav pri Katedre fyzikalnej chemie, Slovenska vysoka skola technicka, Bratislava, Kollarovo namesti 2.

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CZECHOSLOVAKIA

TKAC, A.; KELLO, V.; HRIVIKOVA, J.

Dept. of Physical Chemistry, Slovak Technical Univ., Bratislava (for all)

Prague, Collection of Czechoslovak Chemical Communications, No 2, Feb 1966, pp 551-565

"On the theory of macroradical termination. Part 4: Mechanism of termination of macroradicals."

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1

KHASYMSKI, M.; KEL'M, M. [Kelm, M.]; SHIDLOVSKAYA, S. [Szydlowska, S.]; GORAK, B. [Horak, B.]; RIKHTER, V.

From public reports of the heads of the delegations of socialist countries. Tekh. est. 2 no.8:7-11 Ag '65. (MIRA 18:9)

1. Direktor TSentra promyshlennoy estetiki, khudozhestvennogo proyektirovaniya i konstruirovaniya Narodnoy Respubliki Bolgarii (for Khasymski). 2. Predsedatel' Soveta po khudozhestvennomu konstruirovaniya Germanskoy Demokraticheskoy Respubliki (for Kel'm). 3. General'nyy sekretar' Soveta po tekhnicheskoy estetike pri Predsedatele Soveta Ministrov Pol'skoy Narodnoy Respubliki (for Shidlovskaya). 4. Zamestitel' ministra promyshlennosti tovarov shirokogo potrebleniya, zamestitel' predsedatelya Soveta po tekhnicheskoy estetike Chekhoslovatskoy Sotsialisticheskoy Respubliki (for Gorak). 5. Direktor TSentra khudozhestvennogo konstruirovaniya v Zagrebe Sotsialisticheskoy Federativnoy Respubliki Yugoslavii (for Rekhter).

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1

KEL'M, M. [Kelm, M.]

Industrial design at the Leipzig Fair of 1965. Tekh. est. 2 no.8: 28-31 Ag '65. (MIRA 18:9)

1. Predsedatel' Soveta po khudozhestvennomu konstruirovaniya; direktor TSentral'nogo instituta khudozhestvennogo konstruirovaniya Germanskoy Demokraticheskoy Respubliki.

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1

MAS'KO, N.Ye., inzh.; KEL'MA, L.Ya., inzh.

A new evaporator cooler for thermal deaerators. Elek. sta. 33 no.8:71 Ag '62. (MIRA 15:8)
(Steam power plants)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1

PETROV, D.G., dotsent, direktor L'vovskogo nauchno issledovatel'skogo instituta perelivaniya krovi.; LYSENKO, E.V.; KEL'MAN, A.A., kandidat meditsinskikh nauk, direktor L'vovskogo oblastnogo onkologkcheskogo dispansera.

Plasmotherapy of inflammatory diseases of the female genitalia. Akush.i gin. no.2:45-47 Mr-Ap '53. (MLRA 6:5)

1. L'vovskiy nauchon-issledovatel'skiy institut perelivaniya krovi. 2. L'vovskiy oblastnyy onkologicheskiy dispanser. (Gynecology) (Blood--Plasma)

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1

KEL'MAN, A.A., kandidat meditsinskikh nauk [deceased]; KRUKIYER, M.D. (L'vov)

Antitoxic function of the liver in cancer of the cervix uteri during radiotherapy. Klin.med. 33 no.4:85 Ap '55. (MLRA 8:7)

1. Iz L'vovskogo oblastnogo onkologicheskogo dispansera (glavnyy vrach - kandidat meditsinskikh nauk A.A.Kel'man)

(ROENTGEN RAYS, effects,
on liver funct., in ther. of cancer of cervix)
(CERVIX, UTERINE, neoplasms,
ther., x-rays, liver funct. in)
(LIVER FUNCTION TESTS, in various diseases,
cancer of cervix, in x-ray ther.)

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1

KRYLOVSKIY, S.S.; KEL'MAN, A.B.; OSTROVSKIY, A.N.

Firing refractory raw materials in a fluidized bed. Ogneupory 29 no.1:13-17 '64. (MIRA 17:3)

1. Gosudarstvennyy institut po proyektirovaniyu predpriyatiy po proizvodstvu stali.

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1

KEL'MAN, A.B.; PETROVA, Yu.I.; NUZHNYY, N.A.; PERESADA, M.P.

Mixing burner for natural gas. Ogneupory 30 no.8:8-9 '65. (MIRA 18:8)

1. Nauchno-issledovatel'skiy i proyektnyy institut metallurgicheskoy promyshlennosti (for Kel'man, Petrova). 2. Shamotnyy zavod "Krasnaya Zvezda" (for Nuzhnyy, Peresada).

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1

VOLOVINSKAYA, V., kand. tekhn. nauk; RUBASHKINA, S.; POLETAYEV, T.; KEL'MAN, B.; MERKULOVA, V.

Improving the quality of hams during salting with the use of phosphates and sodium ascorbates and glutamates. Mias. ind. SSSR. 30 no.4:48-50 '59. (MIRA 12:12)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut myasnoy promyshlennosti.

(Meat, Salt)

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1

VOLOVINSKAYA, V., kand.tekhn.nauk; KEL'MAN, B.

Determination of the moisture absorption capacity of meat. Mias. ind. SSSR 31 no.6:47-48 '60. (MIRA 13:12)
(Meat) (Moisture)

KEL'MAN, B.M.

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1

Category: USSR/Electronics Electronic Optics H-3

Abs Jour : Ref Zhur - Fizika, No 1, 1957, No 1662

Author : Baranovskiy, S.N., Kaminskiy, D.L., Kel'man, B.M.
Title : Double Magnetic Slit

Orig Pub : Zh. tekhn. fiziki, 1955, 25, No 11, 1954-1956

Abstract : Description of the construction and of several characteristics of a system consisting of two magnetic slits. Experiments have shown that a double magnetic slit deflects and focuses an electric beam, forming a linear image of a point source.

Card : 1/1

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OSIPOVA, Ye.N.; LIKESH, Yar.; KHL'MAN, B.M.

Evaluating the performance of fluidization kilns. Trudy LTI no.54:129-134 '59. (MIRA 13:8)
(Fluidization--Equipment and supplies)

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1

VOLOVINSKAYA, V.P., kand.tekhn.nauk; KEL'MAN, B.Ya., mladshiy nauchnyy sotrudnik

Effect of the technological factors and various surfaces on the adhesive properties of the sausage meat. Trudy VNIIMP no.14:10-20 '62. (MIRA 16:8)

(Sausages)

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1

VOLOVINSKAYA, V.P., kand. tekhn. nauk; KEL'MAN, B.Ya., mladshiy nauchnyy sotrudnik

Developing the method for determining moisture absorbability of meat. Trudy VNIIMP no.11:128-138 '62. (MIRA 18:2)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1

VOLOVINSKAYA, V.P., kand. tekhn. nauk; KEL'MAN, B.Ya., mladshiy nauchnyy sotrudnik

Use of the penetration method for determining the consistency of back fat. Trudy VNIIMP no.12:149-156 '62. (MIRA 18:2)

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1

KEL'MAN, E. I.

KEL'MAN, E. I.

Ob otvetstvennosti vozdushnogo perevozchika za vred i ubytki. (In: Voprosy vozdushnogo prava, v. 1. Moskva, 1927. p. 179-219)
Title tr.: Liability of air carriers for losses and damages.

DLC: Law Library

SO: Aeronautical Sciences and Aviation in the Soviet Union, Library of Congress, 1955.

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1"

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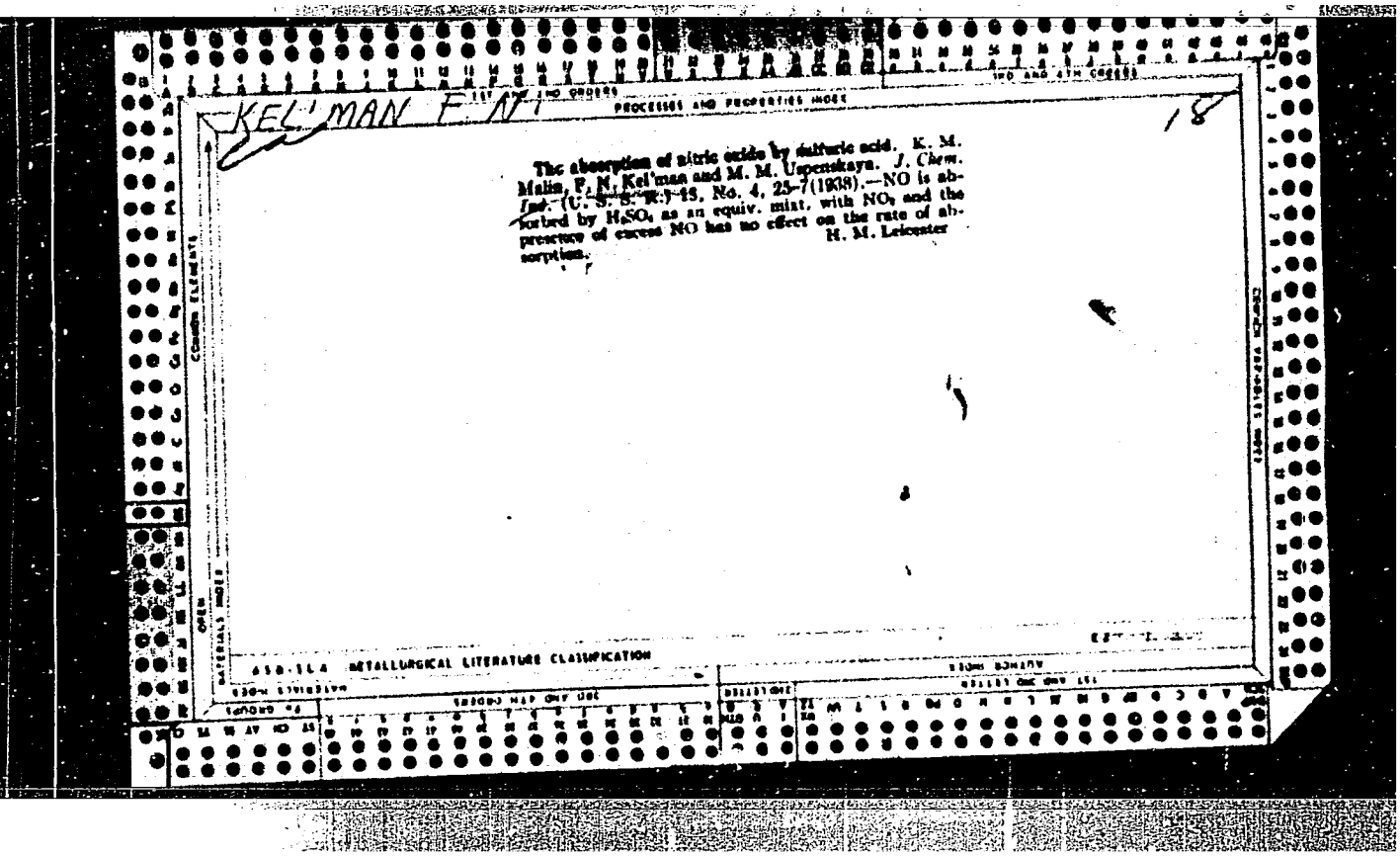

KEL'MAN F. N.

PROCESSES AND PROPERTIES INDEX

18

The absorption of nitric oxide by sulfuric acid. K. M. Malin, F. N. Kel'man and M. M. Ugenskaya. *J. Chem. Ind.* (U. S. S. R.) 15, No. 4, 25-7(1938).—NO is absorbed by H_2SO_4 as an equiv. mixt. with NO_2 and the presence of excess NO has no effect on the rate of absorption. H. M. Leicester

A50-1L4 METALLURGICAL LITERATURE CLASSIFICATION

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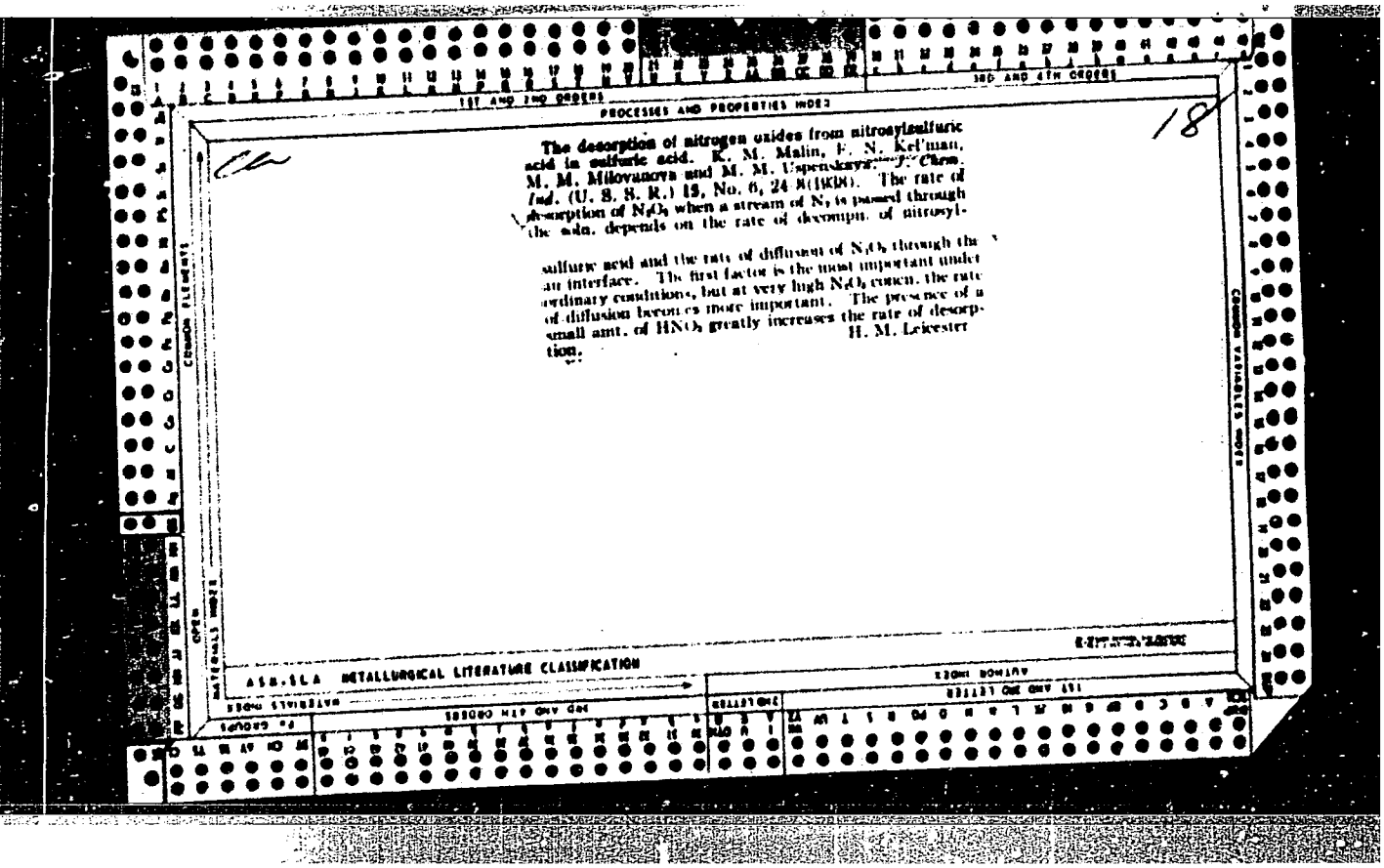

PROCESSES AND PROPERTIES INDEX

18

The desorption of nitrogen oxides from nitrosylsulfuric acid in sulfuric acid. K. M. Malin, F. N. Kel'man, M. M. Milovanova and M. M. Uspenskaya. *Zh. Prikl. Khim.* (U. S. S. R.) **13**, No. 6, 24 8(1940). The rate of desorption of N_2O_3 when a stream of N_2 is passed through the soln. depends on the rate of decompn. of nitrosylsulfuric acid and the rate of diffusion of N_2O_3 through the air interface. The first factor is the most important under ordinary conditions, but at very high N_2O_3 concn. the rate of diffusion becomes more important. The presence of a small amt. of HNO_3 greatly increases the rate of desorption. H. M. Leicester

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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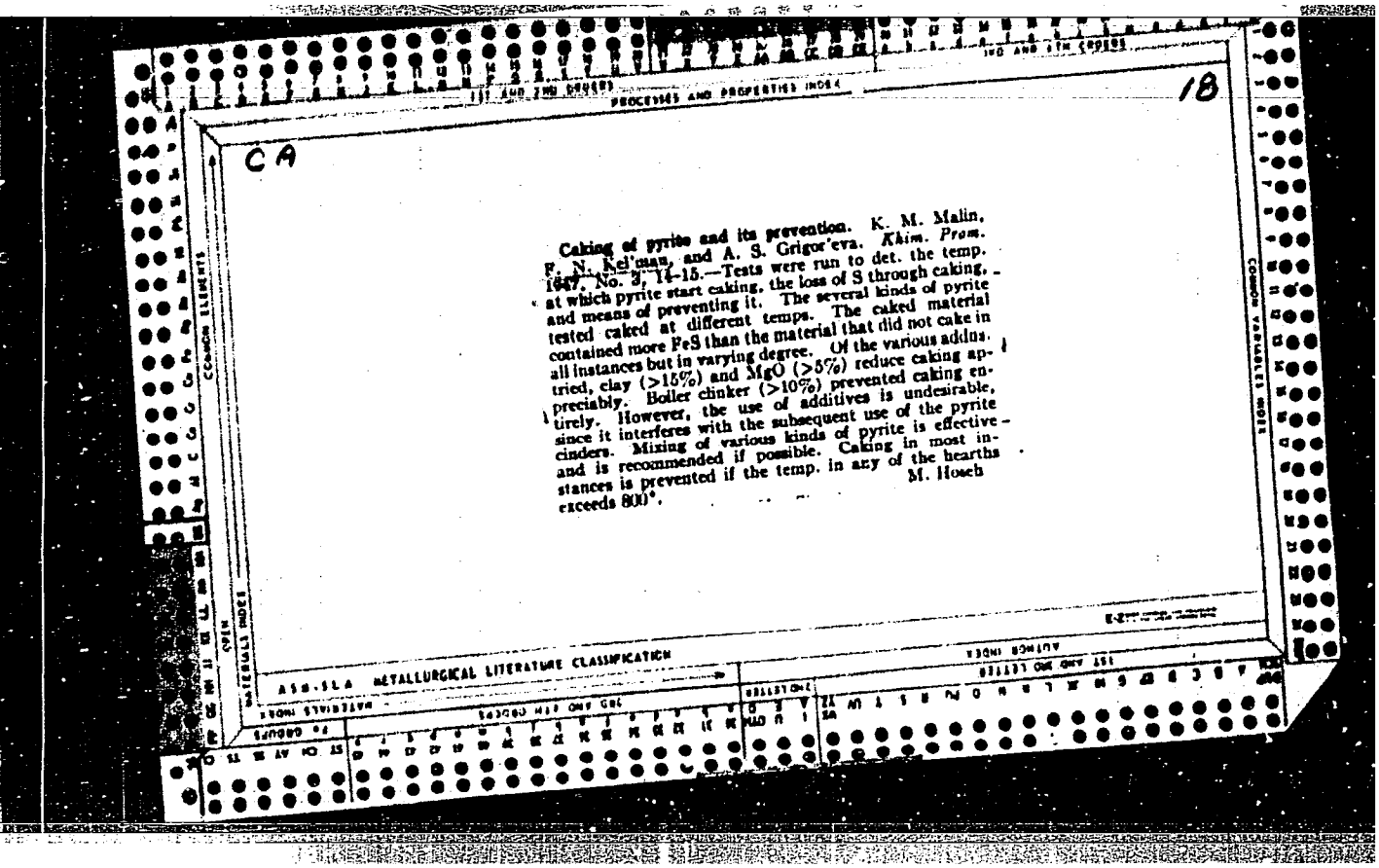

CA

18

Caking of pyrite and its prevention. K. M. Malin, F. N. Nel'man, and A. S. Grigor'eva. *Khim. Prom.* 1947, No. 3, 14-15.—Tests were run to det. the temp. at which pyrite start caking, the loss of S through caking, and means of preventing it. The several kinds of pyrite tested caked at different temps. The caked material contained more FeS than the material that did not cake in all instances but in varying degree. Of the various addns. tried, clay (>15%) and MgO (>5%) reduce caking appreciably. Boiler clinker (>10%) prevented caking entirely. However, the use of additives is undesirable, since it interferes with the subsequent use of the pyrite cinders. Mixing of various kinds of pyrite is effective and is recommended if possible. Caking in most instances is prevented if the temp. in any of the hearths exceeds 800°.

M. Hoseh

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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KEL'MAN (~~FNU~~) F. N.

USSR/Pyrites
Furnaces - Design

"Tendency of Pyrites to Form Clinkers and Methods of Elimination," Malin, Kel'man, Grigor'eva, 2 pp

"Khimi Promysh" No 3

Discusses susceptibility of various types of ores (Revdinsk, Belevinsk, etc.) , and the process of burning out sulfur in the Karelo-Finnish streaked pyrites at various temperatures. A new type of furnace should be perfected to burn out clinkers at a temperature of about 1100°.

PA 10T35

Sci Res Inst. po udobreniyam) i insektofungisidam)

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1

AMELIN, A.G.; BALEYEV, A.V.[deceased]; BRUTSKUS, Ye.B.; KEL'MAN, F.N.; OSHEROVICH, R.Ye.; STEPANOV, M.N.; CHEPELEVETSKIY, M.L.; CHERNOBAYEVA, M.M.; MIKHAL'CHUK, B.V., redakter; LEONT'YEVA, K.D., redakter; SHPAK, Ye.G., teknicheskiy redakter.

[Methods of analyzing and controlling the production of sulfuric acid and superphosphates] Metody analiza i kontrolia proizvodstva sernoi kisloty i superfosfata. Sost. A.G.Amelin i dr. Pod red. B.V.Mikhal'chuka. Moskva, Gos.nauchno-tekhn. izd-vo khim. lit-ry, 1955. 159 p. (MLRA 9:5)

1.Moscow. Nauchnyy institut po udobreniyam i insektofungisidam.
(Sulphuric acid) (Phosphates)

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1

SOV/32-24-9-8/53

AUTHOR: Kel'man, F. N.

TITLE: An Accelerated Method for the Determination of Selenium in Goods of Sulfuric Acid Production (Uskorennyy metod opredeleniya selena v materialakh sernokislotnogo proizvodstva)

PERIODICAL: Zavodskaya Laboratoriya, 1958, Vol 24, Nr 9, pp 1061-1064 (USSR)

ABSTRACT: There exist several selenium determination methods, among them that of M. N. Smirnov (Ref 3). The latter has the disadvantage that oxygen is used for the oxidation and that selenium has to be separated from tellurium. The present method is based on the thermal decomposition of the sample in the electric furnace at about 750°, in an air current containing oxides of nitrogen. Selenium is gasified in the dioxide form, is collected and determined iodometrically. The time involved in the analysis is stated to be 1,5 - 2 hours. A diagram of the experimental layout is given, together with a description and the procedure of analysis. The laboratory technicians G. L. Drobinskaya and G. F. Mikheyeva participated in these experiments. Besides SeO_2, TeO_2 and As_2O_5 are volatilized in the thermal decomposition, without, however, interfering with the iodometric

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An Accelerated Method for the Determination of Selenium in Goods of Sulfuric Acid Production

selenium determination at a pH = 0,9 - 1,5. In order to prevent a possible volatilization of elementary selenium (without oxidation to SeO_2) it is pointed out that the heating to about 750° should be carried out slowly, so as to facilitate a complete oxidation of selenium. Several tables of analysis results for various materials are given, and evidence is provided for the advantage over other methods of the method described. There are 1 figure, 4 tables, and 6 references, 5 of which are Soviet.

ASSOCIATION: Nauchnyy institut po udobreniyam i insektofungisidam im. Ya. V. Samoylova (Scientific Institute of Fertilizers and Insecto-Fungicides imeni Ya. V. Samoylov)

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1

KEL'MAN, F.N.; KIRYUSHKINA, M.S.

Improved method for determining arsenic in vanadium catalysts. (MIRA 15:5)
[Trudy] NIUIF no.164:45 '59.
(Arsenic—Analysis)

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1

KEL'MAN, Faina Natanovna; BRUTSKUS, Yelena Borisovna; OSHEROVICH, Rakhil' Khaymovna. Prinimali uchastiye: GERBURT, Ye.V.; MIKHAYL'CHUK, B.V.; SHPAK, Ye.G., tekhn. red.

[Methods of analysis in the control of the production of sulfuric acid and phosphorous fertilizers] Metody analiza pri kontrole proizvodstva sernoi kisloty i fosfornykh udobrenii. Moskva, Goskhimizdat, 1963. 351 p. (MIRA 17:2)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1

KEL'MAN, Faina Natanovna; BRUTSKUS, Yelena Borisovna; OSHEROVICH, Rakhil' Khaimovna; MIKHAL'CHUK, B.V., red.; ODERBERG, L.N., red.

[Analysis methods in the production control of sulfuric acid and phosphorous fertilizers] Metody analiza pri kontrole proizvodstva sernoi kisloty i fosfornykh udobrenii. Moskva, Khimiia, 1965. 390 p. (MIRA 18:12)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1

KEL'MAN, G.Ya.

Toxicology of paraoxyneozone and "Antox." Kauch. i rez. 24 no.8:44-45 '65. (MIRA 18:10)

1. Sanitarno-epidemiologicheskaya stantsiya Moskvy.

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1

KEL'MAN, G.Ya.

Comparison evaluation of the toxic properties of rubber antioxidants. Kauch. i rez. 22 no.12:39-40 D '63. (MIRA 17:9)

1. Sanitarno-epidemiologicheskaya stantsiya, Moskva.

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1

KRIPAK, N.; KEL'MAN, I.; BRAZHNIKOV, V.

Our experience in modernizing production. Mias. ind. SSSR 29 no.6:8-13 '58. (MIRA 11:12)

1.Semipalatinskiy myasokombinat.
(Meat industry--Equipment and supplies)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1

L 45674-66 EWT(m)/T WE

ACC NR: AP6023622 SOURCE CODE: UR/0318/66/000/004/0012/0015

AUTHOR: Agafonov, A. V.; Osipov, L. N.; Rogov, S. P.; Uzunkoyan, P. N.; Finelonov, V. P.; Zhandanovskiy, N. B.; Perezhigina, I. Ya.; Kel'man, I. V.; Pisarchik, A. N.; Afanas'yev, V. I.; Khavkin, V. A.; Laz'yan, N. G.

ORG: All-Union Scientific Research Institute of Petroleum Refining (Vsesoyuznyy nauchno-issledovatel'skiy institut po pererabotke nefti); Novokuybyshev Petroleum Refinery (Novokuybyshevskiy neftepererabatyvayushchiy zavod)

TITLE: Experience with catalytic hydrocracking of vacuum distillate on the hydrofining assembly of the Novokuybyshev Petroleum Refinery

SOURCE: Neftepererabotka i neftekhimiya, no. 4, 1966, 12-15

TOPIC TAGS: catalytic cracking, petroleum product, gas oil fraction, diesel fuel, gasoline

ABSTRACT: The VNIINP has developed a variant of the process for producing diesel fuel involving one-step hydrocracking of sulfur-containing vacuum distillates on an alumi-num-cobalt-molybdenum catalyst. The results of laboratory experiments with this vari-ant were sucessfully applied at the experimental industrial hydrofining assembly of the Novkuybyshev Petroleum Refinery. The operation of the hydrocracking assembly is described. The feed stock for the plant hydrocracking was vacuum gas oil obtained from distillation of sulfur feed stock. Distillation of the hydrogenate produced:

UDC: 665.644.2.048.5:665.658.2

Card 1/2

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L 45674-66
ACC NR: AP6023622

diesel oil which met all the requirements of GOST 4749-49 for DL grade; a gasoline fraction characterized by a low sulfur content (0.002-0.03), a relatively heavy fractional composition (melting range 120-180°), and a low octane number (42), and is recommended as feed stock for catalytic reforming; the gaseous products methane (49.2 wt. %), ethane (29.4%), propane (17.8%) and butanes (3.6%). The residue of the distillation of fuel fractions is recommmended as feed stock for catalytic cracking. It is concluded that the hydrocracking of vacuum gas oil on the hydrofining assembly of NKNPZ confirmed the results of work carried out by the VNIINP on pilot plants for the purpose of designing high-capacity units. Orig. art. has: 1 figure and 2 tables.

SUB CODE: 11/ SUBM DATE: none/ ORIG REF: 001/ OTH REF: 003

Card 2/2 fv

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1

KURKO, V., kand. tekhn. nauk; KEL'MAN, L.

Separation of dimethyl esters of pyrogallol and its homologs by means of paper chromatography. Mias ind SSSR 34 no. 6: 50-52 '63. (MIRA 17:5)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut myasnoy promyshlennosti.

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1

KURKO, V.I., kand. tekhn. nauk; KEL'MAN, L.F., mladshiy nauchnyy sotrudnik

Chemical nature of smoke components. Trudy VNIIMP no.11:106-118 '62. (MIRA 18:2)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1

KURKO, V.I., kand. tekhn. nauk; KEL'MAN, L.F., mladshiy nauchnyy sotrudnik

Phenols content of sausage products as indicator of their smokiness. Trudy VNIIMP no.12:83-91 '62. (MIRA 18:2)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1

KEL'MAN L F.

USSR/Human and Animal Physiology. Metabolism. Nutrition.

Abs Jour: Ref Zhur-Biol., No 12, 1958, 55332.

Author : Belen'kiy, N.G., Krylova, N.N., Chertkov, I.L., Bazarova, K.I., Zuyeva, L.D., Sevost'yanov, B.A., Kel'man, L.F.

Inst : All-Union Academy of Agricultural Sciences.

Title : The Influence of Thermal Treatment on the Assimilation of Meat Protein

Orig Pub: Dokl. VASKhNIL, 1957, No 4, 23-29.

Abstract: During a period of 6 days, 26 rats of 180-200 gr body weight each, received daily 10 gr of beef meat with methionine-S^{35} proteins. Seven control rats were given raw ground meat. Nine rats were fed ground meat which has been heated in an ultrathermostate at 80° [C] for one hour, and 10 rats received ground meat heated in an autoclave at 120° [C]. Two days after the last (6th) feeding, all rats were killed. The proteins were extracted from their plasmas and livers, and their radioactivity was determined. The assimilation of proteins in their natural state as compared to those denaturized by heat

Card : 1/2 All-U Sci Res Inst. of Meat Industry

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1

Abs Jour: Ref Zhur-Biol., No 12, 1958, 55322.

did not show any differences. Thereafter, this investigation was continued on dogs (numbering 8), whereby the nitrogen balance was studied as well. Here, it was established that natural proteins are assimilated somewhat better than denaturized proteins. Also, it was established that the degree of denaturalization does not exert any specific influence upon protein assimilation.

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1

KURKO, V.I., kand.tekhn.nauk; KEL'MAN, L.E., mladshiy nauchnyy sotrudnik

Aromatic properties of phenols, products of thermal decomposition of wood. Trudy VNIIMP no.14:36-48 '62. (MIRA 16:8)
(Meat, Smoked) (Phenols)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1

KURKO, V.I., kand. tekhn. nauk; KEL'MAN, L.F., mladshiy nauchnyy sotrudnik; ROGOV, I.A., kand. tekhn. nauk

Some comparative studies of conventional and electrostatic smoking. Trudy VNIIMP no.12:92-103 '62. (MIRA 18:2)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut myasnoy promyshlennosti (for Kurko, Kel'man). 2. Moskovskiy tekhnologicheskiy institut myasnoy i molochnoy promyshlennosti (for Rogov).

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1

KURKO, V.I., kand. tekhn. nauk; KEL'MAN, L.F., inzh.-khimik;
MEL'TSER, F.R., inzh.-khimik; KUZNETSOVA, A.A., laborant

Comparative phenol characteristics of smoking preparations and uncooked smoked sausage. Trudy VNIIMP no.16:211-220 '64.
(MIRA 18:11)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1

ALEKSANDROV, S.N., inzh; KEL'MAN, L.Ya., inzh; PLISAN, I.G., inzh;
KAMENSKIY, S.K., inzh; RUVINSKIY, I.M., inzh

Improving the feed-water tubing circuit. Elek.sta 29 no.9:58-64
S '58. (MIRA 11:11)

1. Pridneprovskaya gosudarstvennaya rayonnaya elektricheskaya stantsiya.

(BOILERS)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1

KEL'MAN, L.Ya., inzh.; MAS'KO, N.Ye.

Opération of ash dumps in electric power plants. Elek. stat. 35 no.1:11-13 Ja '64. (MIRA 17:6)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1

KEL'MAN, L.Ya., inzh.

Arrangement for feeding TKZ boilers. Elek.sta. 31 no.7:85 Jl '60. (MIRA 13:8)

(Boilers)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1

KEL'MAN, L.Ya., inzh.; MAS'KO, N.Ye., inzh.

Use of shot in the cleaning of a feed water economizer in a system operating on Estonian shale. Elek. sta. 34 no.11:16-20 N '63. (MIRA 17:2)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1

YAKOBSON, A.N., inzh.; TITOV, P.P., inzh.; VERNER, Ye.V., inzh.; KEL'MAN, M.M., inzh.

Automatic unit for molding ornamental ceramic tiles. Stroi.i dor. mashinostr. 5 no.3:25-28 Mr '60. (MIRA 13:6)
(Tiles)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1

KOZYREV, G.S., dots.; KEL'MAN, N.I.

Variations in the development of leg muscles in different duck breeds. Uch.zap. KHGU 52:245-263 '54. (MIRA 11:11)

1. Kafedra zoologii pozvonochnykh Khar'kovskogo gosudarstvennogo universiteta (zav. - prof. I.B. Volchanetskiy).
(Duck breeds) (Extremities (Anatomy))

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1

L 6956-66 EWT(1)/FCC/EWA(h) GW

ACC NR: AP5026229 SOURCE CODE: UR/0048/65/029/010/1865/1869

29
13

AUTHOR: Glikman, L.G.; Kel'man, V.M.; Yakushev, Ye.M.

ORGAN: Institute of Nuclear Physics, Academy of Sciences, KazSSR (Institut yadernoy fiziki Akademii nauk KazSSR)

TITLE: On the electromagnetic mechanism of cosmic ray acceleration /Report, All-Union Conference on Cosmic Ray Physics held at Apatity, 24-31 August 1964/

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya. v. 29, no. 10, 1965, 1865-1869

TOPIC TAGS: Primary cosmic ray, particle acceleration, alternating magnetic field, relativistic particle

ABSTRACT: The relativistic equations of motion of a charged particle moving in the plane of antisymmetry of a varying axially symmetric magnetic field are solved for the case when the azimuthal component of the vector potential in the plane of antisymmetry has the form $f(r/(t - a))/r$, where f is an arbitrary function, r is the distance from the axis, t is the time, and a is a constant. Numerical solutions were computed for a field which alternately increases and decreases between finite limits and remains constant for a time at each limit. For the computations it was assumed that the field strength oscillates between 1.0×10^{-5} and 1.2×10^{-5} Oe with a period of 3.5×10^{5} sec. Some of these solutions are presented graphically and are discussed. The computations show that the ratio of particle energy to field strength is not constant and

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1

L 6956-66

ACC NR: AP5026229

that particles can be accelerated to high energies by variable magnetic fields which do not increase indefinitely in strength. Orig. art. has: 19 formulas and 4 figures.

SUB CODE: AA SUBM DATE: 00/--Oct65 ORIG. REF: 006 OTH REF: 000

Card 2/2

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1

L 10664-66 EWT(d)/EWT(l) LJP(c) GG

ACC NR: AP5028313 SOURCE CODE: UR/0057/65/035/011/1997/2003

AUTHOR: Glikman, L.G.; Kel'man, V.M.; Yakushev, Ye.M.

ORG: none

TITLE: Solution of the nonrelativistic equations of motion for a charged particle in a certain class of varying electromagnetic fields

SOURCE: Zhurnal tekhnicheskoy fiziki, v.35, no. 11, 1965, 1997-2003

TOPIC TAGS: charged particle, motion equation, electromagnetic field, mathematic method

ABSTRACT: The solution of the nonrelativistic equations of motion for a certain class of motions of a charged particle in a certain class of varying electromagnetic fields is reduced to quadratures and eliminations. The electromagnetic fields considered are those that are axially symmetric, have a median plane which is a plane of symmetry for the electric field and a plane of antisymmetry for the magnetic field, and for which the radial and axial components of the vector potential vanish in the median plane (in the gauge in which the scalar potential vanishes) and the azimuthal component of the vector potential in the median plane has the form $F(r^2/(at^2 + bt + d))/r$, where r is the distance from the axis, t is the time, a, b, and d are constants, and F represents an arbitrary function. The motions considered are those in which the particle remains in the median plane. The particular form of the vector

Card 1/2 UDC: 537.533.3

L 10664-66

ACC NR: AP5028313

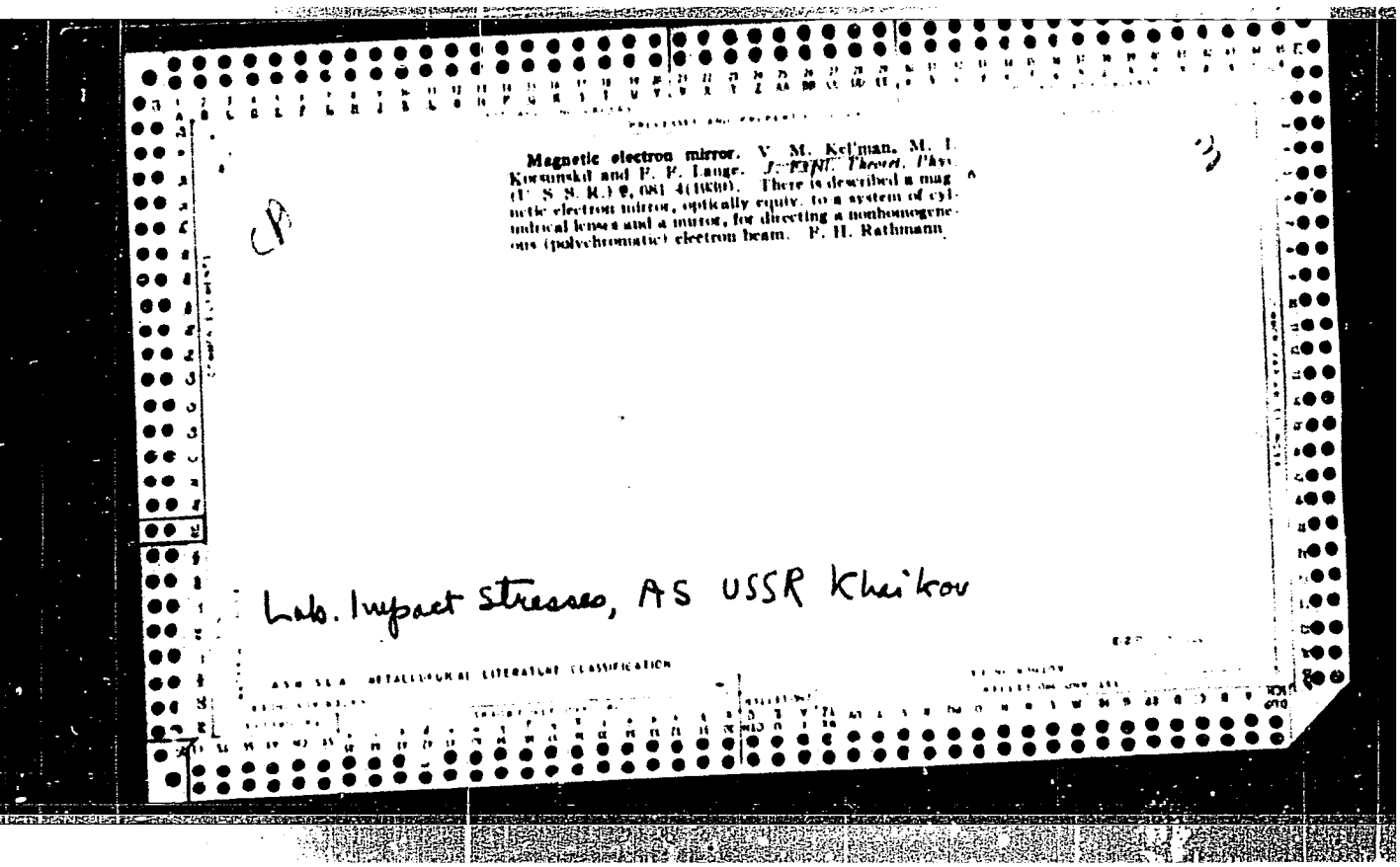
APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1"

potential was investigated because it leads simply to an integral of motion. The treatment is different depending on whether the polynomial $at^2 + bt + d$ does or does not vanish during the motion, and special discussion is required for the case in which the particle passes through the point r = 0. No applications are suggested for the results obtained. Orig. art. has: 38 formulas.

SUB CODE: 20 SUBM DATE: 12Apr65/ ORIG.REF: 003 OTH REF: 001

Card 2/2

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1

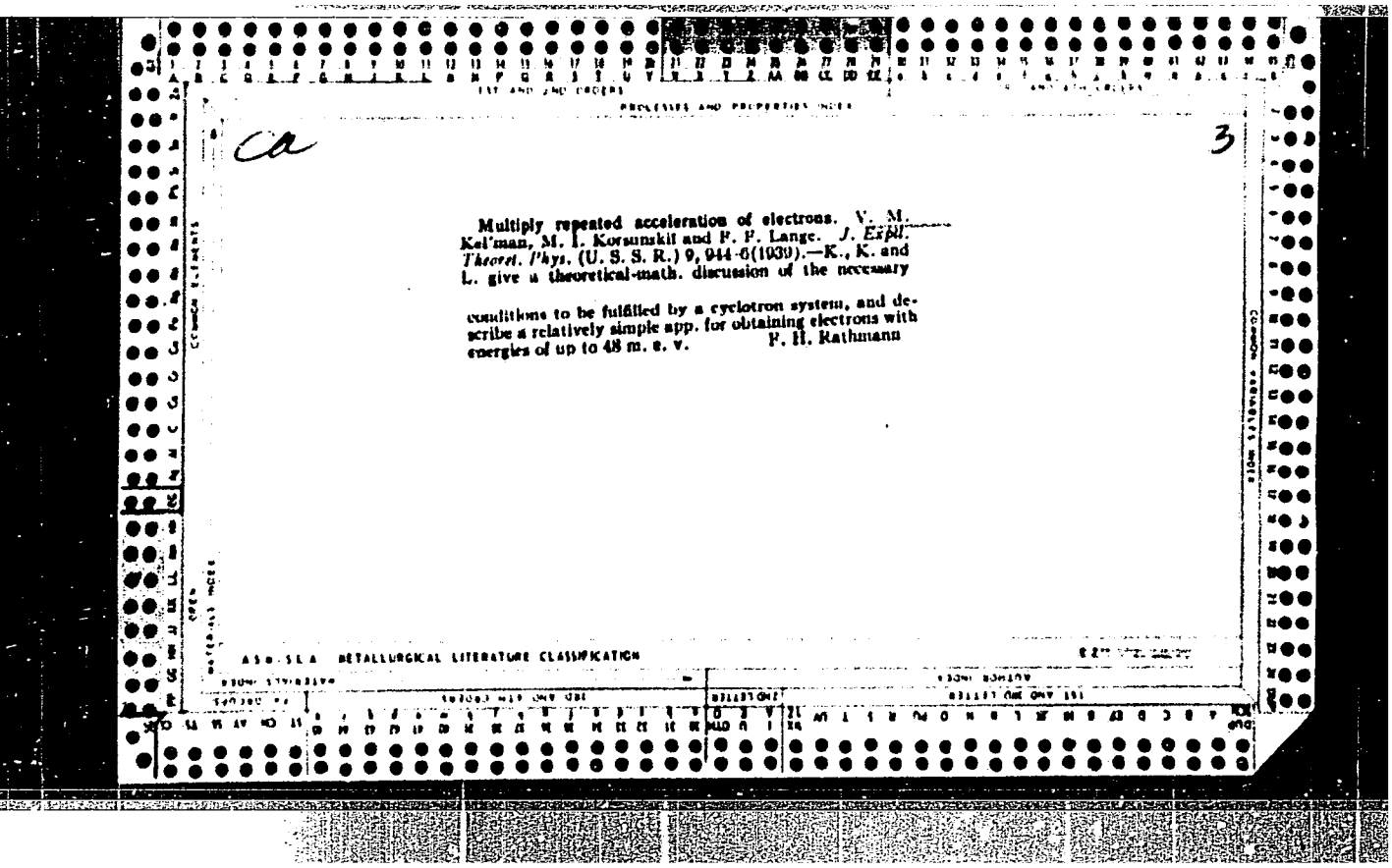


Magnetic electron mirror. V. M. Kel'man, M. I. Kovanskii and F. P. Lange. *J. Exptl. Theoret. Phys.* (U. S. S. R.) 9, 681-4 (1939). There is described a magnetic electron mirror, optically equiv. to a system of cylindrical lenses and a mirror, for directing a nonhomogeneous (polychromatic) electron beam. P. H. Rathmann

Lab. Impact Stresses, AS USSR Kharkov

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1



ca

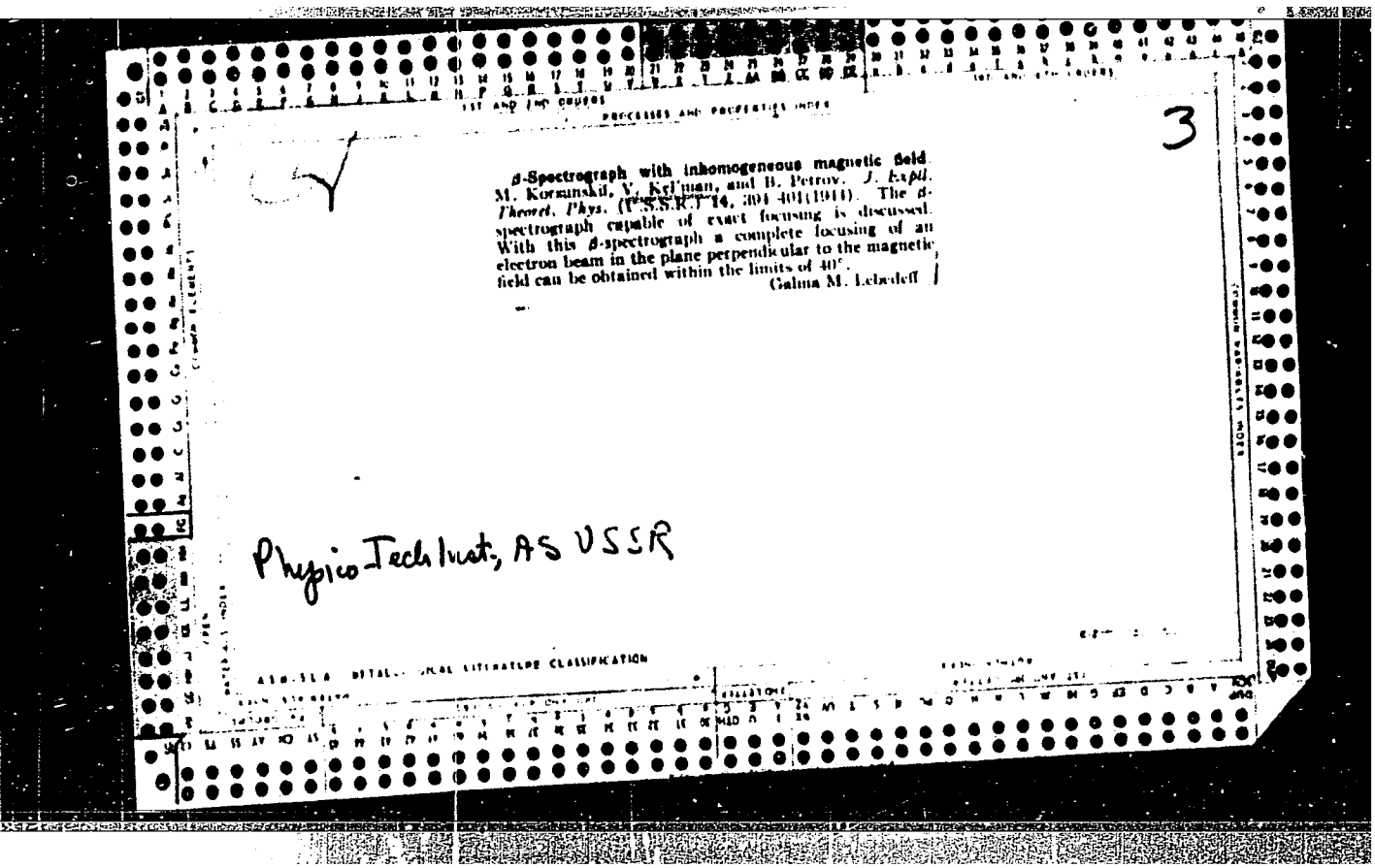
3

Multiply repeated acceleration of electrons. V. M. Kel'man, M. I. Korsunskiĭ and F. F. Lange. *J. Exptl. Theoret. Phys.* (U. S. S. R.) 9, 944-6(1939).—K., K. and L. give a theoretical-math. discussion of the necessary conditions to be fulfilled by a cyclotron system, and describe a relatively simple app. for obtaining electrons with energies of up to 48 m. e. v. F. H. Rathmann

A S M - S L A METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1



3

β-Spectrograph with inhomogeneous magnetic field. M. Korsunskiĭ, V. Kel'man, and B. Petrov. *J. Exptl. Theoret. Phys.* (U.S.S.R.) 14, 304-404(1944). The β-spectrograph capable of exact focusing is discussed. With this β-spectrograph a complete focusing of an electron beam in the plane perpendicular to the magnetic field can be obtained within the limits of 40°.
Galina M. Lelaideff

Physico Tech Inst, AS USSR

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

3

β-Spectrograph with an inhomogeneous magnetic field. M. Korsunskii, V. Kel'man, and B. Petrov. (Phys. Tech. Inst., Acad. Sci. Ukrainian SSR). *J. Phys.* (U.S.S.R.) 9, 7-13(1945).—See *C.A.* 39, 2026[9].

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1

USSR/Physics - Spectrography, Beta-Rays Apr 51

"Problem of Beta-Spectrograph Construction Based on Analogy With an Optical Spectrograph," V. M. Kelman, D. L. Kaminskiy, Leningrad Physicotech Inst, Acad Sci USSR

"Zhur Eksper i Teoret Fiz" Vol XXI, No 4, pp 555-561

Authors criticize spectrograph by Klemperer (cf. "Phil Mag" 20, 545, 1935) as not similar to opt instr and consider its dispersion as zero. Authors design new spectrograph analogous to opt and det its dispersion and line width.

LC 180T109

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1

USSR/Physics - Electron Optics Dec 51

"Motion of Charged Particles in a Magnetic Field of a Linear Current and in the Electric Field of a Cylindrical Condenser," M. Kelman, I. V. Rodnikova, Leningrad Phys Tech Inst, Acad Sci USSR

"Zhur Eksper i Teoret Fiz" Vol XXI, No 12, pp 1364-1369

Derives expressions in form of quadratures, dets motion of charged particles in a constant electromagnetic field of a cylindrical condenser with linear conductor along its axis. At certain ratio of field tension and initial velocity of particles such a system

198T103

USSR/Physics - Electron Optics (Contd) Dec 51

has the property to focus bundles of charged particles. Shows that linear charged conductor acts on motion of charged particles with initial velocity perpendicular to conductor as deviating electrooptical element. Submitted 5 Jan 51.

198T103

KELMAN, V. M.

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1

KELMAN, V. M.

USSR/Nuclear Physics - Electron Lens Apr 52

"Discussion: Modeling the Motion of Charged Particles in Axial-Symmetrical Magnetic Fields," D.L. Kaminskiy, V.M. Kelman

"Zhur Tekh Fiz" Vol XXII, No 4, pp 703-706

Authors criticize article by I.I. Tsukerman (Zhur Tekh Fiz" Vol XXI, 599, 1951) who states that an axial-symmetrical magnetic field scatters electrons similarly to a concave optical lens. Although it may occur in very particular cases, authors consider it impossible to construct a magnetic scattering lens. Received 11 Dec 51.

216T93

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1

USSR/Nuclear Physics - Modeling Motion May 52
of Particles

"Modeling the Motion of Charged Particles in a Two-Dimensional Electric Field Taking Into Account the Volumetric Charge," B. V. Bobykin, V. M. Kelman, D. L. Kaminskiy

"Zhur Tekh Fiz" Vol XXII, No 5, pp 736-743

In order to find trajectories of charged particles in a plane free of space charge, the trajectories are considered to be those of balls rolling on a rubber membrane. (cf. P. Klynen, Philips Tech

222T65

Rev, 2,231, 1937; V. K. Zvorykin et al. "Proceedings of IRE" 27,558, 1939). Author modifies this method for the case of space charge. Received 14 Feb 52.

222T65

KELMAN, V. M.

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1

USSR/Physics - Spectrometers

Card 1/1 Pub. 43 - 10/11

Authors : Kel'man, V. M.; Kaminskiy, D. L.; and Romanov, V. A.

Title : Beta-spectrometer with greater resolving power

Periodical : Izv. AN SSSR. Ser. fiz. 18/1, 148-154, Jan-Feb 1954

Abstract : The construction of a beta-spectrometer of greater resolving power (with symmetrical path of rays) is announced. The spectrometer consists of an electromagnet with screen, copper vacuum-chamber with two copper tubes attached to it, two magnetic lenses, source retainer and recording device. The components of the electrical magnet are described. The current in the coils is directed in such a way that the magnetic current produced by it in the iron yokes are oriented opposite each other. The magnetic current passes through the gap between the upper and lower iron plates of the yoke which also assume the role of poles. Some results obtained with this beta-spectrometer are listed. Two USSR references (1939-1951). Graphs; drawings.

Institution : Academy of Sciences USSR, Physico-Technical Institute

Submitted : December 19, 1953

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1

USSR/Nuclear Physics - Electron magnetic mirrors

Card 1/1 Pub. 43 - 11/11

Authors : Kel'man, V. M., and Lyubimov, K. V.

Title : Similar trajectories of charged particles in magnetic fields

Periodical : Izv. AN SSSR. Ser. fiz. 18/1, 155-160, Jan-Feb 1954

Abstract : Two simple types of electron magnetic mirrors were investigated to determine their suitability in studying the trajectory variations of charged particles in magnetic fields. The magnetic fields of these mirrors were determined by the vector potentials representing homogeneous functions of coordinates with two and three degrees of homogeneity. The form of the trajectory of a charged particle moving in a magnetic field changes during change in the velocity of the particle and depends also upon the intensity of the magnetic field. Three references: 2-USSR and 1-USA (1933-1944). Graphs; drawings.

Institution : Academy of Sciences USSR, Physico-Technical Institute

Submitted : December 15, 1953

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1

USSR/Nuclear Physics - Beta-spectrometers

Card 1/1 Pub. 43 - 4/97

Authors : Kel'man, V. M.; Kaminskiy, D. L.; and Romanov, V. A.

Title : A larger prism beta-spectrometer with two magnetic lenses

Periodical : Izv. AN SSSR, Ser. fiz. 18/2, 209-214, Mar-Apr 1954

Abstract : The construction and testing of a larger scale prism-type beta-spectrometer with two magnetic lenses for greater resolving and illuminating power is announced. In principle this spectrometer is not different from the spectrometer model described in a previous report; however, its dimensions are larger and it was constructed with greater perfection. The structural and technical characteristics of the prism-type beta-spectrometer are described in detail. Three references: 2 USSR and 1 USA (1939-1954). Graphs; drawings.

Institution : .....

Submitted : .....

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1

KELMAN, V. M.

USSR/Physics - Charged particle motion FD-911

Card 1/1 Pub 153-20/26

Author : Kelman, V. M. and Yavor, S. Ya.

Title : Motion of charged particles in a homogeneous magnetic field on which the magnetic field of a linear current and the electric field of a cylindrical condenser are superposed

Periodical : Zhur. tekh. fiz. 24, 1329-1332, Jul 1954

Abstract : Expressions defining the motion of charged particles in a homogeneous field on which the magnetic field of a linear current and the electric field of a cylindrical condenser are superposed are obtained in the form of quadratures. Numerical integration is carried out in certain particular cases. One reference, by the same author.

Institution : --

Submitted : July 29, 1953

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1

USSR/ Physics - Electron optics FD-1037

Card 1/1 : Pub. 153 - 8/23

Authors : Kel'man, V. M. Kaminskiy, D. L., and Yavor, S. Ya.

Title : Experimental investigation of cylindrical magnetic electronic lenses

Periodical : Zhur. tekh. fiz., 24, 1410-1427, Aug - 1954

Abstract : Discuss results of experimental investigation into the electron-optical properties of the magnetic cylindrical lense whose field differs but slightly from the field of two infinite rectlinear oppositely directed currents and also into the systems consisting of two such lenses. Give graphs showing the relation between object position and image for various current strengths. Thanks Diplomat V. P. Vlasenko. Seven references, 2 USSR (N. I. Shtepa, ZhTF, 216, 1952; A. M. Strashkevich, ZhTF, 91, 1940).

Institution : - -

Submitted : 16 March 1954

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1

FD 410

USSR/Physics - Beta-spectrometer

Card 1/1

Author : Kel'man, V. M., Dusayev, G. S., Malkiel', G. S., and Nevodnichiy, N. N.

Title : Beta-spectrometer with magnetic prism and one magnetic lens

Periodical : Zhur. eksp. i teor. fiz. 26, 107-108, Jan 1954

Abstract : Describes the construction and testing of a beta-spectrometer similar to an optical prismatic spectrometer with one lens. Follow the principles of construction discussed by V. M. Kel'man and D. L. Kaminskiy in their work appearing in this journal (Vol 21, 555, 1951)

Institution : Leningrad Physicotechnical Institute, Acad Sci USSR

Submitted : November 5, 1951

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1

KEL'MAN, V.M.

YAVOR, S.Ya.; KEL'MAN, V.M., professor

[Magnetic cylindrical lenses] Magnitnye tsilindricheskie linzy. Leningrad, 1955. 9 p. (MLRA 9:3)
(Electrooptics) (Lenses)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1

KEL'MAN, V.M.

Category : USSR/Electronics - Electronic Optics H-3

Abs Jour : Ref Zhur - Fizika, No 2, 1957, No 4279

Author : Baranovskiy, S.N., Kaminskiy, D.L., Kel'man, V.M.
Title : Investigation of the Electron-Optical Properties of Straight Magnetic Slits.

Orig Pub : Zh. tekhn. fiziki, 1955, 25, No 4, 610-624

Abstract : An investigation was made of the electron-optical properties of many magnetic slit lenses (cylindrical lenses), having various structural dimensions. The constructions of these lenses and their properties are described. A study was made of the qualitative picture of the distribution of the magnetic field in the lens. A qualitative study of the distribution of the field was carried out with the aid of a ballistic galvanometer in three planes, oriented at different angles (ϑ =90°; 180°, and 135°) relative to the surface of the pole pieces and intersecting under the central line of the non-magnetic gap of the lens. It is shown that the distribution obtained in the planes ϑ=90° and 135° are in very close agreement with the field of the isolated single conductor, if the current in this conductor is propertly chosen.

Card : 1/2

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1

Category : USSR/Electronics - Electronic Optics H-3

Abs Jour : Ref Zhur - Fizika, No 2, 1957, No 4279

It is thus possible to find the linear current producing a "equivalent" field. Equations for the distribution of the trajectories of the electrons in the field of the isolated linear current were taken from the work by Kel'man and Roknikov (Zh. eksperim. i teoret. fiziki, 1951, 21, 1364). These equations are used to determine the trajectories which start at the peaks of a conical beam and which then fall into the field of the isolated current. It is shown that the field of the isolated current focuses such a beam, forming focal lines.

The authors describe an experimental camera, in which it is possible to study the electron-optical properties of beams of particles, emerging from a gun and entering into the field of the slit lenses of the above construction. The quality of focusing of the beam into a focal line is checked from the image on a fluorescent screen, which is placed on a mount that can be moved in two mutually perpendicular directions, so that the screen can be placed in any previously specified position.

Photographs of the focal line obtained in this manner are given. It is shown that the results of calculation using the "equivalent" linear current and the results of the experiments are close to each other.

Card : 2/2

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1

KEL'MAN, V.M.; LEBEDEV, A.A., akademik, redaktor; SMIRNOVA, A.V. tekhnicheskiy redaktor.

[Electron optics] Elektronnaia optika. Moskva, Izd-vo Akademii nauk SSSR, 1955. 163 p. (MLRA 8:10)
(Electron optics)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1

FD-3178

USSR/Physics - Electron Optics

Card 1/1 Pub. 153-8/21

Authors : Kel'man, V. M. and Yavor, S. Ya.

Title : Investigation of a cylindrical magnetic lens with an iron shell

Periodical: Zhur. tekh. fiz., 25, No 8 (August), 1955, 1405-1411

Abstract : The authors investigate the electron-optical properties of a jacketed cylindrical magnetic lens encased in iron plates 80 cm long. After a physical description of the apparatus they outline its operational characteristics, expressing the data in graphical form. They give the curve of field distribution, variation in field intensity, dependence of angle of rotation at various lens-to-object distances, as well as other curves expressing various interrelationships among these characteristics.

Submitted : March 9, 1955

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1

KEL'MAN, V.M.; KRASNOV, I.F.

Rubber diaphragm technique for determining electron current magnitudes in vacuo. Zhur.tekhn.fiz. 25 no.10:1714-1725 S '55. (MLRA 9:1)

(Electrons) (Electric discharges through gases)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1

KRASNOV, I.F.; KEL'MAN, V.M.

Rubber diaphragm technique for solving problems on plane diodes with limited emitting surface widths. Zhur.tekh.fiz. 25 no.10: 1726-1734 S '55. (Diodes) (MLRA 9:1)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1

Kel'man, V. M.

BARANOVSKIY, S.N.; KAMINSKIY, D.L.; KEL'MAN, V.M.

A double magnetic slit. Zhur.tekh.fiz. 25 no.11:1954-1956 O '55.
(Electron optics) (MLRA 9:1)

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1"

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1

KEL'MAN,V.M.; ROMANOV,V.A.; METSKHVARISHVILI,R.Ya.

Measurement of the internal conversion coefficients for L- and M-subshells of ThC. Dokl. AN SSSR 103 no.4:577-579 Ag'55. (MLRA 8:11)

1. Leningradskiy fiziko-tekhnicheskiy institut Akademii nauk SSSR. Predstavleno akademikom A.F.Ioffe
(Thorium--Isotopes) (Spectrometry) (Nuclear shell theory)

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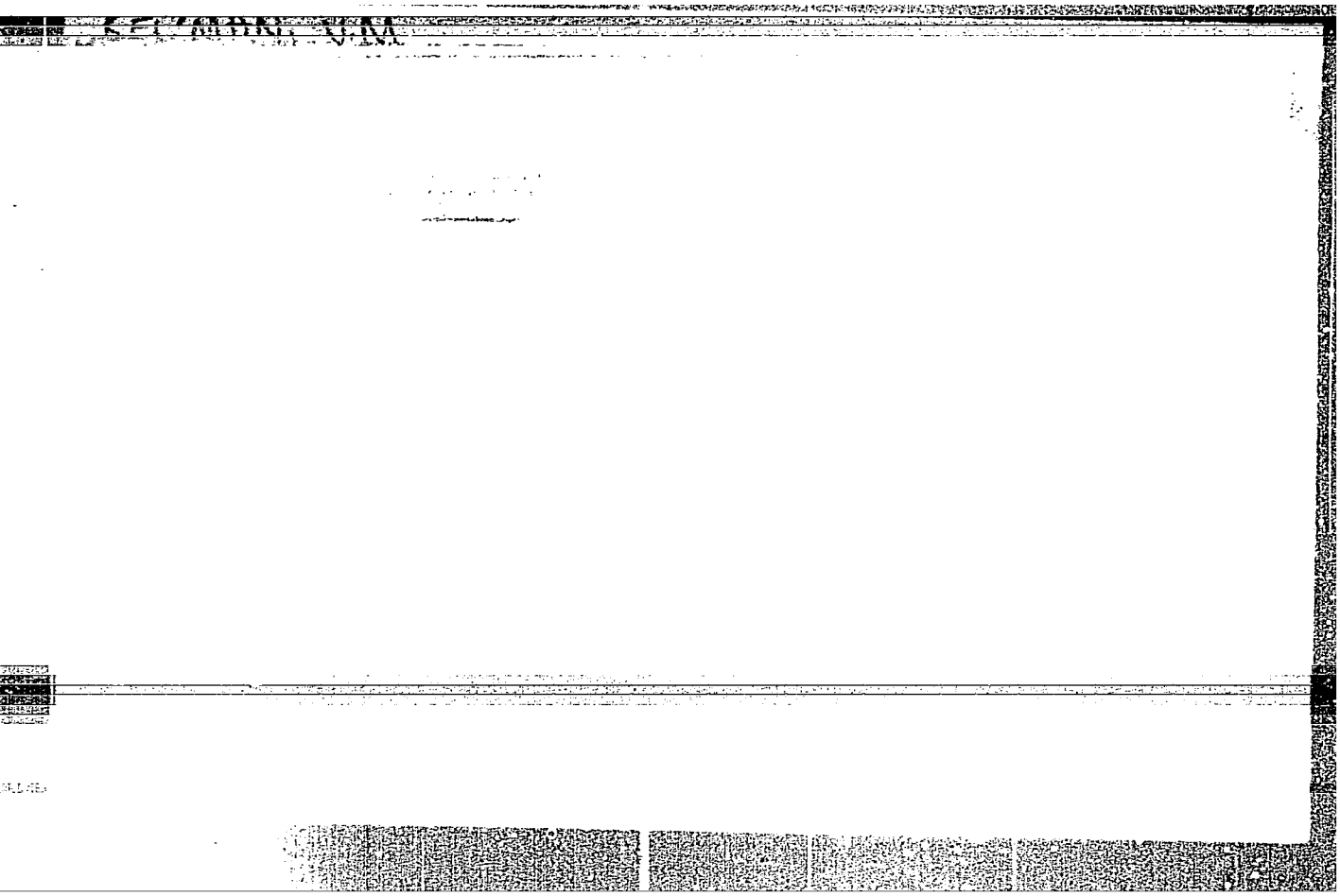

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1

KEL'MAN, V.M.

Category : USSR/Nuclear Physics - Structure and Properties of Nuclei C-4

Abs Jour : Ref Zhur - Fizika, No 2, 1957 No 3200

Author : Kel'man, V.M., Metskhvarishvili, R.Ya., Romanov, V.A., Rusinov, L.I., Konoplev, K.A.

Inst : Leningrad Physicotechnical Institute, Academy of Sciences USSR

Title : Determination of the Ratios of the Internal-Conversion Coefficients for the Isomeric Transition of In^{114}.

Orig Pub : Dokl. AN SSSR, 1956, 107, No 3, 394-397

Abstract : A prism beta spectrometer with a transmission factor .02% and a resolution 0.04% was used to measure the ratios of the conversion coefficients at various L subshells and also at the K, M, and N shells for the 192-kev isomeric transition in In^{114}. The ratios are $L_I : L_{II} : L_{III} = (0.24 \pm 0.01) : (1.27 \pm 0.02) : 1$; $L/M = 4.4 \pm 0.1$; $M/N = 4.6 \pm 0.2$; $K/L = 1.32 \pm 0.02$. All data are in good agreement with the type of multipole transition assumed (E4).

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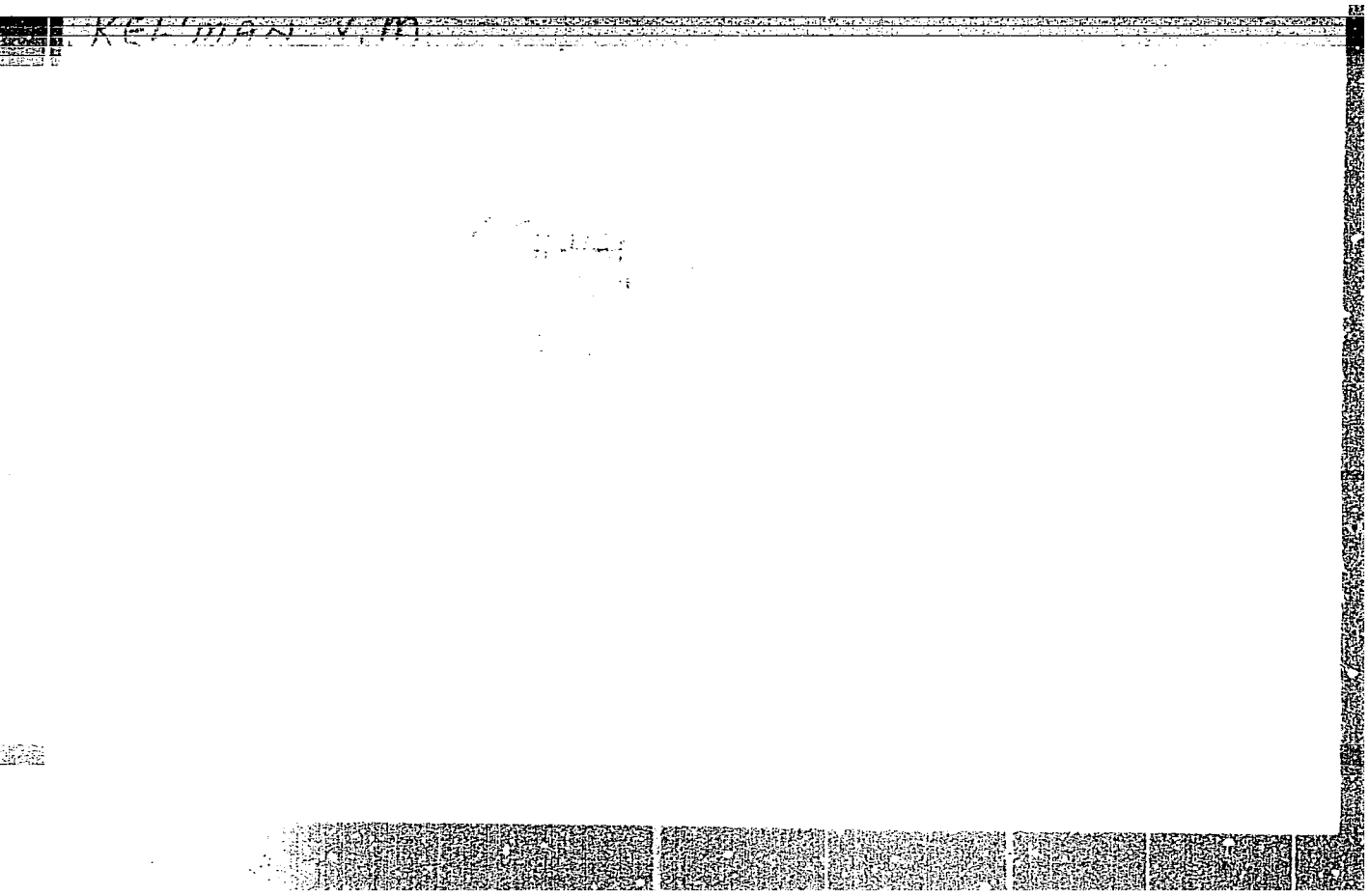

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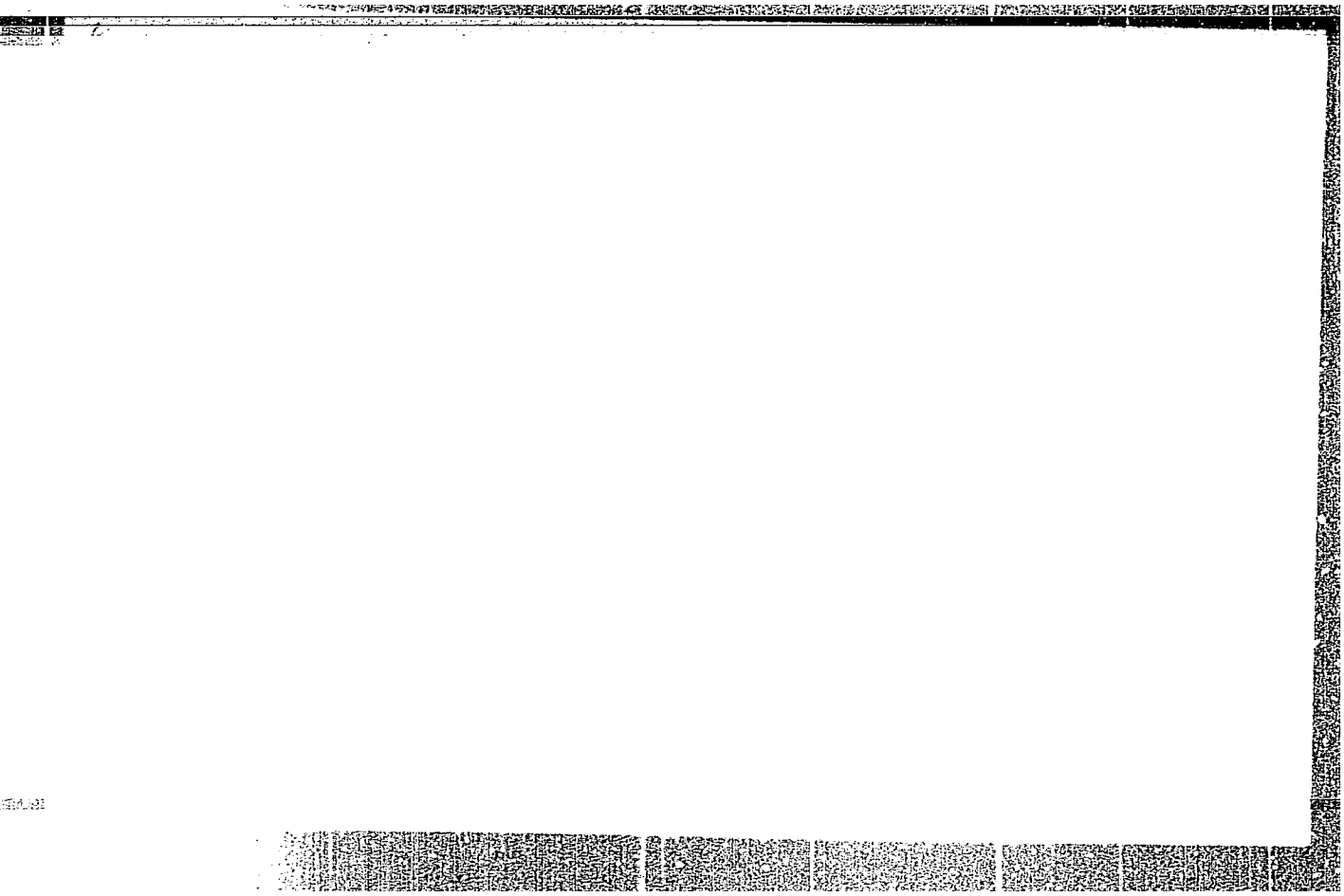

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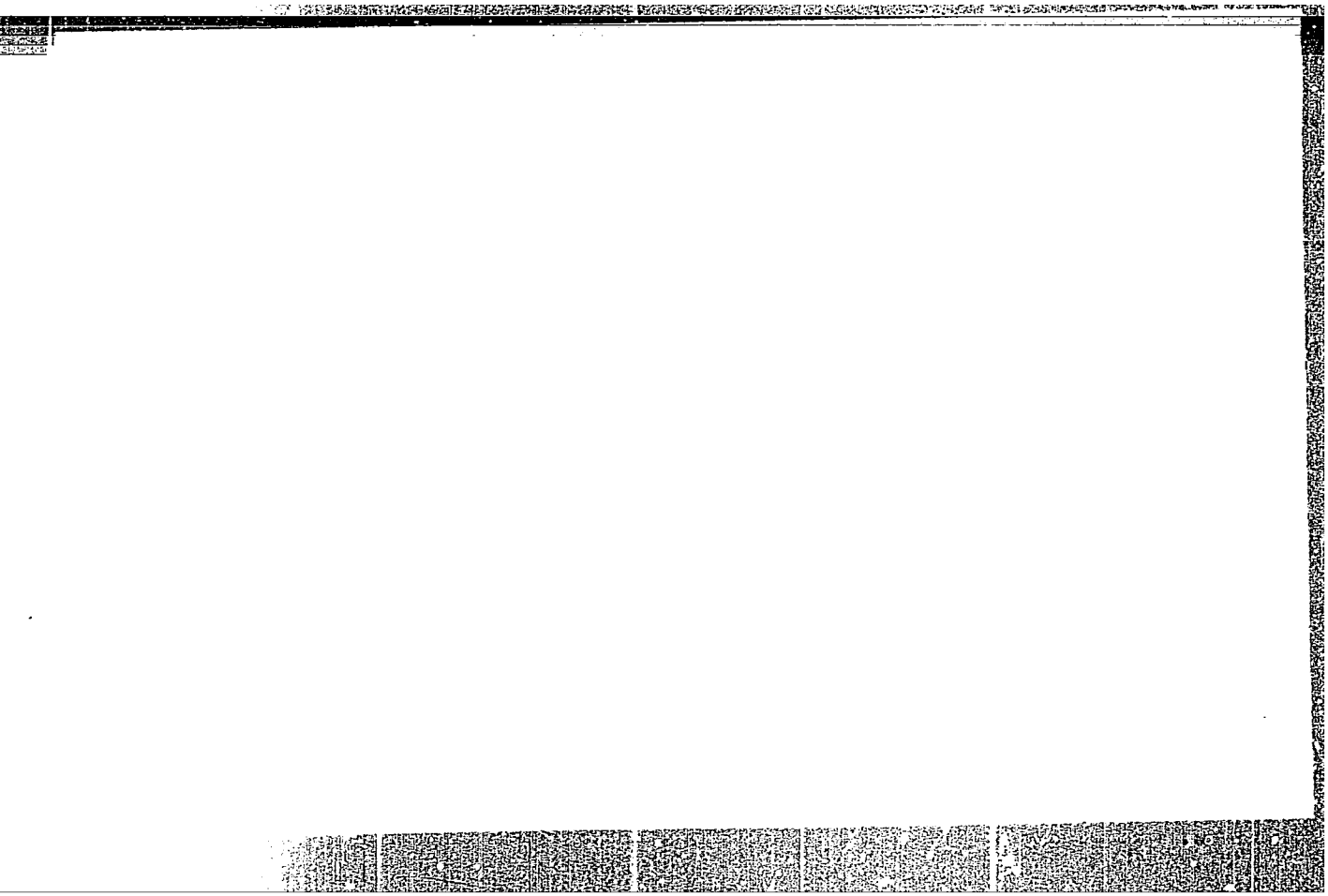

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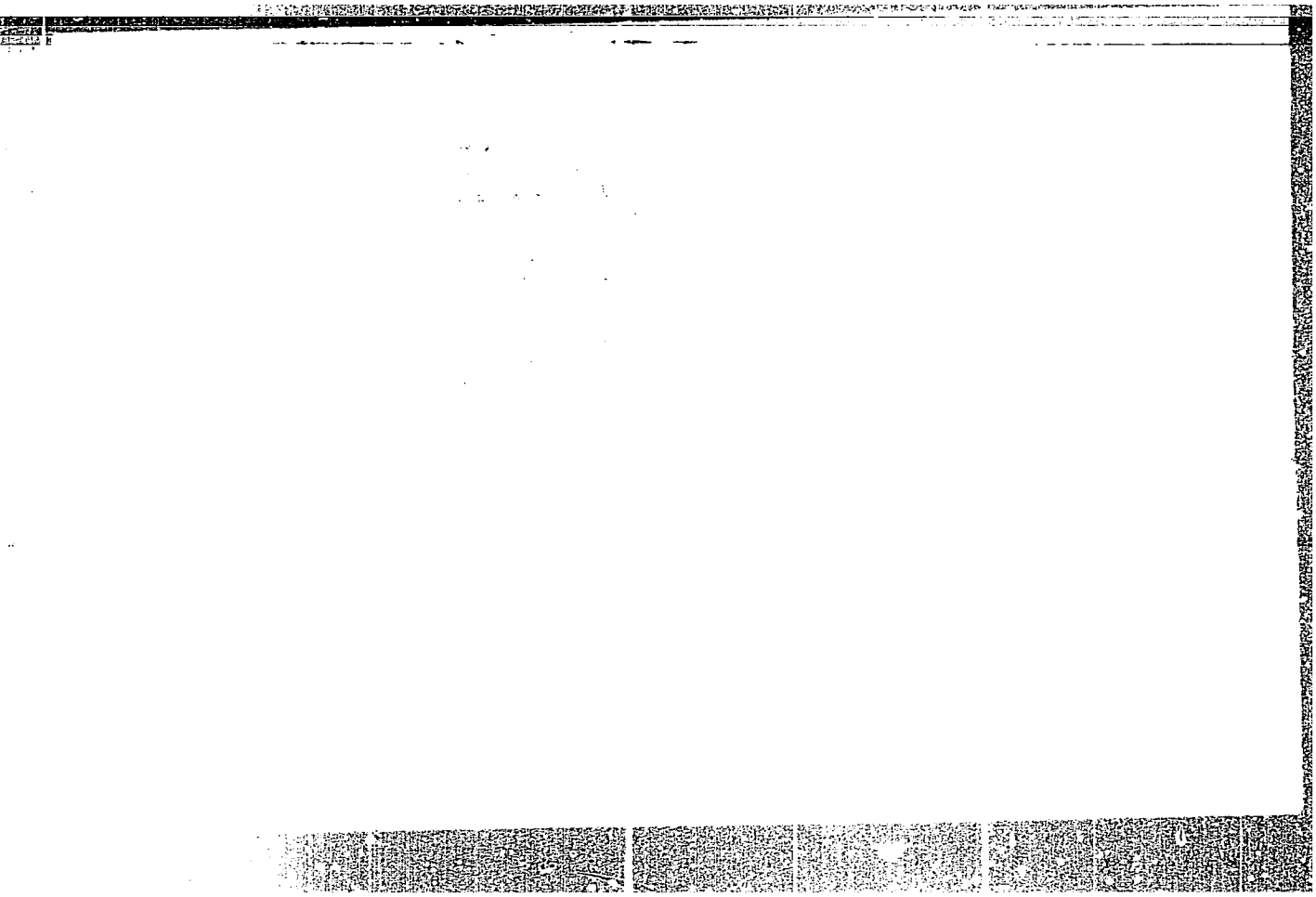

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1

KEL'MAN, V. M.

AUTHORS Kel'man, V.M., Utkin, K.G., Loginova, L.N. 57-9-23/40

TITLE A Simplified Construction of a System Containing a Rubber Membrane for the Determination of the Trajectories of Charged Particles in the Presence of a Space Charge.
(Uproshchennaya konstruktsiya ustanovki s rezinovoy membranoy dlya opredeleniya trayektoriy zaryazhennykh chastits v prisutstvii ob"yemnogo zaryada.)

PERIODICAL Zhurnal Tekhn. Fiz., 1957, Vol. 27, Nr 9, pp. 2092-2096 (USSR)

ABSTRACT In the papers by V.M. Kel'man and I.V. Krasnov, Zhurnal Tekhn. Fiz., 1955, Vol. 25, p. 1714, and p.1726 it was shown that the accuracy with which the trajectories of charged particles was determined by means of rubber membranes could be considerably increased by giving up modelling particle motion by means of a ball rolling on a rubber surface, and by using only graphic methods for the construction of trajectories. Giving up using balls makes it possible to simplify construction considerably, because in such a case the pressure modelling the space charge on the membrane could be brought to

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1

AUTHOR: KEL'MAN,V.M., ROMANOV,V.A., MECCHVARISVILI, R.JA., KOLJUNOV, V.A. PA - 2057

TITLE: Investigation of Conversion Lines in the β Spectrum of an Eu^{152}, Eu^{154} Isotopic Mixture. (Issledovanie konversionnych linij v β-spektre smesi isotopov Eu^{152} i Eu^{154}, Russian).

PERIODICAL: Zhurnal Eksperimental'noi i Teoret.Fiziki, 1957, Vol 32, Nr 1, pp 39-47 (U.S.S.R.)
Received: 3 / 1957 Reviewed: 4 / 1957

ABSTRACT: The authors recorded the lines of the inner conversion on the K shells as well as on the L- and M-subshells of the Sm^{152} and Sm^{154} by means of a prism-β-spectrometer of great resolving capacity and determined the ratios of the conversion coefficients at the energies 122 and 123,2 keV of the transitions. The resolving capacity of the prism spectrometer used here was increased by the following measures: 1) Shielding of the tubes of the spectrometer against extraneous magnetic fields by iron rings. 2) The straight gap of the registering device was replaced by a slightly curved gap. 3) A certain modification of the feeding of the magnet and of the lens of the spectrometer.

The L-subshells of the Sm^{152} and Gd^{154}: A diagram demonstrates the sphere of the β-spectrum of a β-spectrum of Eu^{152} and Eu^{154}

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with those lines that were produced by the electrons of the inner conversion of the γ-rays with the energies 122 and 123,2 keV on the subshells of the Sm^{152} and Gd^{154}. The conditions under which the lines were obtained as well as the behavior of the lines are discussed. The theoretical ratios of the conversion coefficients agree with the here measured ratios.

The M-subshells of samarium: A further diagram demonstrates the sphere of the :-spectrum with the lines which are produced by the inner conversion on the M-subshell of samarium. The authors found the following ratio of the coefficients of the conversion on the M-subshells: $M_I:M_{II}:M_{III} = 1:(3,4\pm0,1):(3,3\pm0,2)$. This corresponds to the conclusions from the approximated calculations of the relative conversion coefficients. Furthermore $L/M = 4,5\pm0,1$ ($L=L_I+L_{II}+L_{III}$; $M = M_I+M_{II}+M_{III}$) was found.

Card 2/3

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1

AUTHORS: Kel'man, V.M., Metskhvarishvili, M.Ia., Romanov, V.A. 56-3-6/59
Tuchkevich, V.V.,

TITLE: The Investigation of Conversion Lines in the ß-Spectrum of Ir^{192}. (Issledovaniye konversionnykh liniy v ß-spektre Ir^{192})

PERIODICAL: Zhurnal Eksperim. i Teoret.Fiziki, 1957, Vol. 33, Nr 3, pp.588-594 (USSR)

ABSTRACT: With the help of a prism-ß-spectrometer (resolving of 0,04 %) the conversion coefficients and the multipole order of the following γ- lines were determined:

Eγ in KeV	K/L	K/M	multipole order
136,3			(8o±1)% E2 + (2o∓1)% M1
2o1,3	1,85±o,o4		(86±2)% E2 + (14∓2)% M1
2o5,8	1,83±o,o4		E2
295 ,8	2,35±o,o4	8,9±o.2	E2
3o8,5	2,38±o,o2	9,5±o,2	(97±2)% E2 + (3∓2)% M1
316,5	2,22±o,o2	9,3±o,2	E2
468,o	3,o ±o,1	1o,2±o,2	E2
6o4,5	4,7 ±o,1		(88±2)% E2 + (12∓2)% M1

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The Investigation of Conversion Lines in the ß- Spectrum of Ir^{192} 56-3-6/59

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There are 2 tables, 3 figures, and 3 Slavic references.

ASSOCIATION: Leningrad Physical-Technical Institute AN USSR
(Leningradskiy fiziko-tekhnicheskiy institut Akademii nauk SSSR)

SUBMITTED: March 18, 1957

AVAILABLE: Library of Congress

Cafd 2/2

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1

KEL'MAN, V.M.

AUTHOR: DOLMATOVA, K.A., KEL'MAN, V.M. 20-6-16/59
TITLE: A Longitudinal β-Spectrometer with Compensated Spherical Aberration.
(Prodol'nyy β-spektrometr s kompensirovannoy sfericheskoy aberratsiyey. Russian).
PERIODICAL: Doklady Akademii Nauk SSSR, 1957, Vol 113, Nr 6, pp 1244 - 1247 (U.S.S.R.)

ABSTRACT: The spherical aberration described in the paper under review is compensated by a transverse magnetic field of the field strength $H = H_1/r$. The additional F is generated by a winding which concentrates in an annular focus the ions which fly out of the source in a wide solid angle. No difficulty is encountered in computing the electrons paths in the range of the homogeneous field. Also in the range where the homogeneous magnetic field is superposed with a field of the field strength $H = H/r$, the differential equations of the motion of the electrons are reduced to quadratures. The present paper contains the revalent formulae for the differential equations and for their solutions. The compensating field was applied in the neighborhood of the apex of the orbit. With the aid of these formulae a form was found for the boundary of the inhomogeneous field which guarantees an annular focus of aberration (if a point source is used). This focus coincides with the linear annular focus which is formed

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A Longitudinal β-Spectrometer with Compensated Spherical Aberration.

by an infinitely small bundle of the ions flying away under an angle of 30^0.

The longitudinal field was generated by a coil of a length of 110 cm and of an internal diameter of 33 cm; this coil was wound on a copper tube. At the same time, this copper tube also served as chamber of the spectrometer . Additional improvements in the homogeneity of the field were achieved by the use of correcting coils. Almost everywhere the form of the coils was in agreement with the computed form of the boundary of the field. The radioactive source was glued to a fastener which was introduced into the vacuum chamber through a Wilson compression /?/ and through a vacuum tap. A counter (G-M5) with a window of a diameter of 90 mm served as detector. Employment of a compensating field reduces the width of the annular projection by about 2.5 times as compared to the width of the projection in a homogeneous field. Further investigations were conducted with the aid of a radioactive source (active Th-precipitation) with the dimensions of 1 X 1 mm. A brief discussion of the results is given.(4 reproductions).

Card 2/3

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1

AUTHOR: Kel'man, V. M., Doctor of Physical-and Mathematical Sciences SOV/30-58-7-13/49

TITLE: New Magnetic Beta-Spectrometer (Novyy magnitnyy beta-spektrometr)

PERIODICAL: Vestnik Akademii nauk SSSR, 1958, Nr 7, pp. 75 - 78 (USSR)

ABSTRACT: The magnetic prism deflecting the electron beam, must be considered as the most important part of this spectrometer which was developed in the Physical-Technical Institute. The parallel electron beam striking the deflection magnet, must remain parallel also after its deflection. This condition, however, can only be satisfied if a deflecting magnet as represented in figure 1, is used. The construction of the β-spectrometer is given in figure 2 and is then described in detail..The conversion line of γ-quanta of different energies is given in figure 3, being a section of the spectrum of conversion electrons which are produced in the decay of Ir^{192}. The conversion lines of the I and Ia active sediment RdTh are given in figure 4. A further perfection of the new β-spectrometer is to be achieved by an improvement of the deflection magnet, the electronic lenses and by shielding

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the electrons against the action of random magnetic fields. It is further suggested to use magnetic material of higher quality and to pay more attention to the stabilization of the magnetic field. This kind of work is carried out at present in the Physico-Technical Institute. There are 4 figures.

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1

AUTHORS: Kel'man, V. M., Peregud, B. P., Dolmatova, K. A. 57-28-5-26/36

TITLE: Accelerators With a Radially Growing Leading Field and Additional Electron Optical Elements for Securing the Vertical Focussing of the Beam (Uskoriteli s radial'no narastayushchim vedushchim polem idopolnitel'nymi elektronnoopticheskimi elementami, obespechivayushchimi vertikal'nuyu fokusirovku puchka)

PERIODICAL: Zhurnal Tekhnicheskoy Fiziki, 1958, Vol. 28, Nr 5, pp. 1056-1064 (USSR)

ABSTRACT: The application of a radially decreasing field in modern weakly focussing accelerators is determined by the necessity of a vertical focussing of the beam of the accelerated particles. The new possibilities, which have been proposed from various sides (references 1-8) immediately attracted the interest of researchers. Recently, numerous experimental and theoretical investigations were conducted dealing with the application of these proposals in different types of accelerators (references 9-22). All these methods have the following in common: 1) The vertical field component is not constant in the middle plane and periodi-

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cally changes its value, or, with respect to the azimuth, even its direction. 2) The functions of the leading and of the focussing field are performed by one and the same field, which only formally can be regarded as a superposition of two fields. This field, however, is created only by one magnetic system; 3) The magnet poles must possess an accurately worked, complicated profile (method by Thomas and the spiral-sector variant) or the field must be created by a great number of accurately placed sector magnets. A series of shortcomings attached to the new accelerator constructions are a result of these circumstances. The authors propose another method. The focalization is effected by supplementary electron optical elements: with cylindrical magnet lenses or magnet gaps. The method guarantees the stability of the radial as well as of the vertical betatron oscillations and can be employed for the construction of circular accelerators of different types. In this paper the possible constructional variants of the focussing system are drawn into consideration and the electron model is described. The peculiarities of the proposed method differentiating it from earlier

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1

ones, are as follows: 1) A separation of the functions of focalization and of leading the beam between two elements - the magnet and the focussing system. This guarantees the free choice of the shape of the leading field and facilitates its creation. As a result of the separation a facilitated leading of the beam and a slackening of the restrictions imposed upon the production and the mounting of the constructional nodes of the accelerator can appear. This is the case in particular, if small adjustments and a flexibility of the elements of the focussing system during the mounting of the accelerator are provided for. 2) The comparatively low weight of the electromagnet creating the leading field in comparison to the weight necessary in earlier methods. This is connected with the fact that the magnetic circuit of the focussing system is not closed by the yoke of this magnet. 3) An increase of the copper weight and of the necessary power. 4) A more simple construction of the electromagnet consisting of the possibility of employing a closed ring magnet with a low number of magnetizing coils and no sector magnet. An electronic simulator was built for experimental exa-

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1

Accelerators With a Radially Growing Leading Field and Additional Electron Optical Elements for Securing the Vertical Focussing of the Beam 57-28-5-26/36

mination. A schematic cross section of this model is shown in figure 2. At present the model is prepared for experiments. The authors thank G.A. Grinberg, Yu.V. Vandakurov, D.G. Alkhazov and D.M. Kaminker. There are 3 figures and 29 references, 10 of which are Soviet.

ASSOCIATION: Fiziko-tekhnicheskiy institut AN SSSR, Leningrad (Leningrad, Physical-Technical Institute, AS USSR)

SUBMITTED: July 11, 1957

1. Particle accelerators--Design 2. Particle beams--Focusing

Card 4/4

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1

KEL'MAN, V.M., doktor fiziko-mat. nauk

New magnetic beta-spectrometer. Vest. AN SSSR 28 no. 7:75-78 Jl '58. (MIRA 11:7)

(Spectrometer)

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1

21(9) SOV/56-35-5-7/56

AUTHORS: Kel'man, V. M., Kolyunov, V. A., Karpov, M. V.

TITLE: The Application of Magnetic Slits for the Creation of Circular Trajectories of Charged Particles (Primeneniye magnitnykh shcheley dlya formirovaniya krugovykh trayektoriy zaryazhennykh chastits)

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1958, Vol 35, Nr 5, pp 1113-1115 (USSR)

ABSTRACT: The authors of the present paper investigated an electron-optical system consisting of magnetic slits with a magnetic field increasing rapidly in the direction of the periphery but not leading to defocusing in a vertical direction, which bends the trajectories of charged particles, rendering them nearly circular. The vector potential in point P of this system has the form

$$A_z = -\frac{I}{c} \ln \frac{(r/a)^{2n} - 2(r/a)^n \cos n\varphi + 1}{(r/a)^{2n} + 2(r/a)^n \cos n\varphi + 1}; \quad A_r = A_\varphi = 0, \quad A = A_z.$$

(I = current in every conductor, r = distance between the axis of the system O and P, a = distance from O to conductor,

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1

The Application of Magnetic Slits for the Creation of Circular Trajectories of Charged Particles

2n = the number of conductors, and φ = the polar angle). For the momentum it holds that $P = \partial L/\partial \dot{x} = m\dot{x} + eA/c = m\dot{z}_0 + eA_c/c =$ const; the Lagrangian $L = \frac{m}{2}(\dot{x}^2 + \dot{y}^2 + \dot{z}^2) + eA\dot{z}/c$. Scheme and schematical drawing of such a system which can be used in an accelerator with a constant guiding field are given (Figs 1, 2). The experiments carried out with this device are described. The device consisted of 16 poles arranged in a circle and having 200 windings each; the distance between the gun and the edge of the poles ~ 4.5 cm, at radial oscillation of the order of 2 cm and vertical oscillations ~ 5 cm. The electron energy amounted to 5 keV (5 - 10 A). The amperage depended in a high degree on the distance between gun and pole. The phenomenon had the shape of a slightly curved band of 1 - 3 mm breadth and 10 - 20 mm height. An arrangement consisting of 32 poles gave similar results. There are 2 figures and 4 Soviet references.

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"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721510013-1

SOV/56-35-5-7/56

The Application of Magnetic Slits for the Creation of Circular Trajectories of Charged Particles

ASSOCIATION: Leningradskiy fiziko-tekhnicheskiy institut Akademii nauk SSSR (Leningrad Physico-Technical Institute of the Academy of Sciences, USSR)

SUBMITTED: May 16, 1958

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AUTHORS: Kel'man, V. M., Metskhvarishvili, R. Ya., Proobrazhenskiy, B.K., ~~Romanov, V. A.,~~ Tuchkevich, V. V.

TITLE: The Investigation of the Spectrum of Conversion Electrons of the Isotopes of Lutetium With Neutron Deficit (Issledovaniye spektra konversionnykh elektronov neytronodefitsitnykh izotopov lyutetsiya)

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1958, Vol 35, Nr 5, pp 1309-1310 (USSR)

ABSTRACT: The investigation of the radiation of greatly deformed nuclei furnishes material for the further development of the collective nuclear model. It is just from this point of view that the isotopes of lutetium are of interest. Recently several papers (Refs 1-4) have been published which deal with lutetium isotopes with neutron deficit, but the data given by these papers do not convey a clear idea of the decay of these isotopes. Additional investigations are therefore necessary. The authors of the present paper investigated the conversion spectrum of the isotopes of a lutetium fraction, which had been separated from a tantalum target irradiated with fast (660 MeV) protons. The method employed for separation has already been

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The Investigation of the Spectrum of Conversion Electrons of the Isotopes of Lutetium With Neutron Deficit

described (Ref 5). Measurements were carried out by means of a prism-β-spectrometer and by means of a double-focusing spectrometer. The spectrum of the conversion electrons consists of many lines, which belong to Lu^{169} (half-life ~1.5 days), Lu^{170} (~ 2 days), Lu^{171} (~8 days), Lu^{172} (~ 6.7 days), Lu^{173} (~200 days). Belonging of lines to the various corresponding isotopes was determined from the half-life. A table gives the energies of γ-transitions the conversion lines of which decrease with the period ~1.5 to 2 days. The second table contains the energies of the γ-transitions with the period 6.7 to 8 days. The energy of these transitions was determined from the energy of K- and L-conversion lines. There are 2 tables and 6 references, 4 of which are Soviet.

ASSOCIATION: Leningradskiy fiziko-tekhnicheskiy institut Akademii nauk SSSR(Leningrad Physico-Technical Institute of the Academy of Sciences, USSR)

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PHASE I BOOK EXPLOITATION SOV/3514

Kel'man, V.M., and S.Ya. Yavor

Elektronnaya optika (Electron Optics) Moscow, Izd-vo AN SSSR, 1959. 372 p. 3,000 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Fiziko-tekhnicheskiy institut.

Ed.: L.A. Artsimovich, Academician; Ed. of Publishing House: Yu.K. Imshenetskiy; Tech. Ed.: A.V. Smirnova.

PURPOSE: The book is intended for students of electron optics.

COVERAGE: The book deals primarily with geometrical electron optics and does not discuss wave properties of electrons. In addition to the theory of focusing particle beams in fields with symmetry of rotation, the theory of focusing in electromagnetic fields with arbitrary space distribution is presented. Cylindrical electron lenses and various kinds of deflection systems are discussed in detail. Much space is devoted to calculations of the motion of charged particles. The last two chapters are devoted to applications of electron optics. No personalities are mentioned. There are 277 references, 119 Soviet (17 are translations), 88 English, 48 German, 13 French, 3 Chinese, and 6 Scandinavian.

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