L 24224-66

ACC NR: AT6008851

molecular sieve properties of the zeolites may be controlled within wide limits at low temperatures. In view of the low adsorption rates at low temperatures, the use of zeolites in dynamic vacuum systems is not very effective. Orig. art. has: 4 figures, 1 table.

SUB CODE: 20/ SUBM DATE: 20Oct65/ ORIG REF: 006/ OTH REF: 000

Card 2/2 BLG

ROMANOV, A.A. (Sverdlovsk); BUCHATSKAYA, M.M. (Sverdlovsk)

Evaluation of the energy of the interaction between oxygen and hydrogen dissolved in molten iron. Izv. AN SSSR. Met. no.3:11-17 My-Je '65. (MIRA 18:7)

L 56667-65
ACCESSION NR: AP5017827 UR/0286/65/000/011/0058/0058
621.521:621.527.8

AUTHOR: Kozlov, V. N.; Romanov, A. A.; Titov, B. F. 16 B

TITLE: An absorption trap for diffusion and mechanical pumps. Class 27, No. 171499

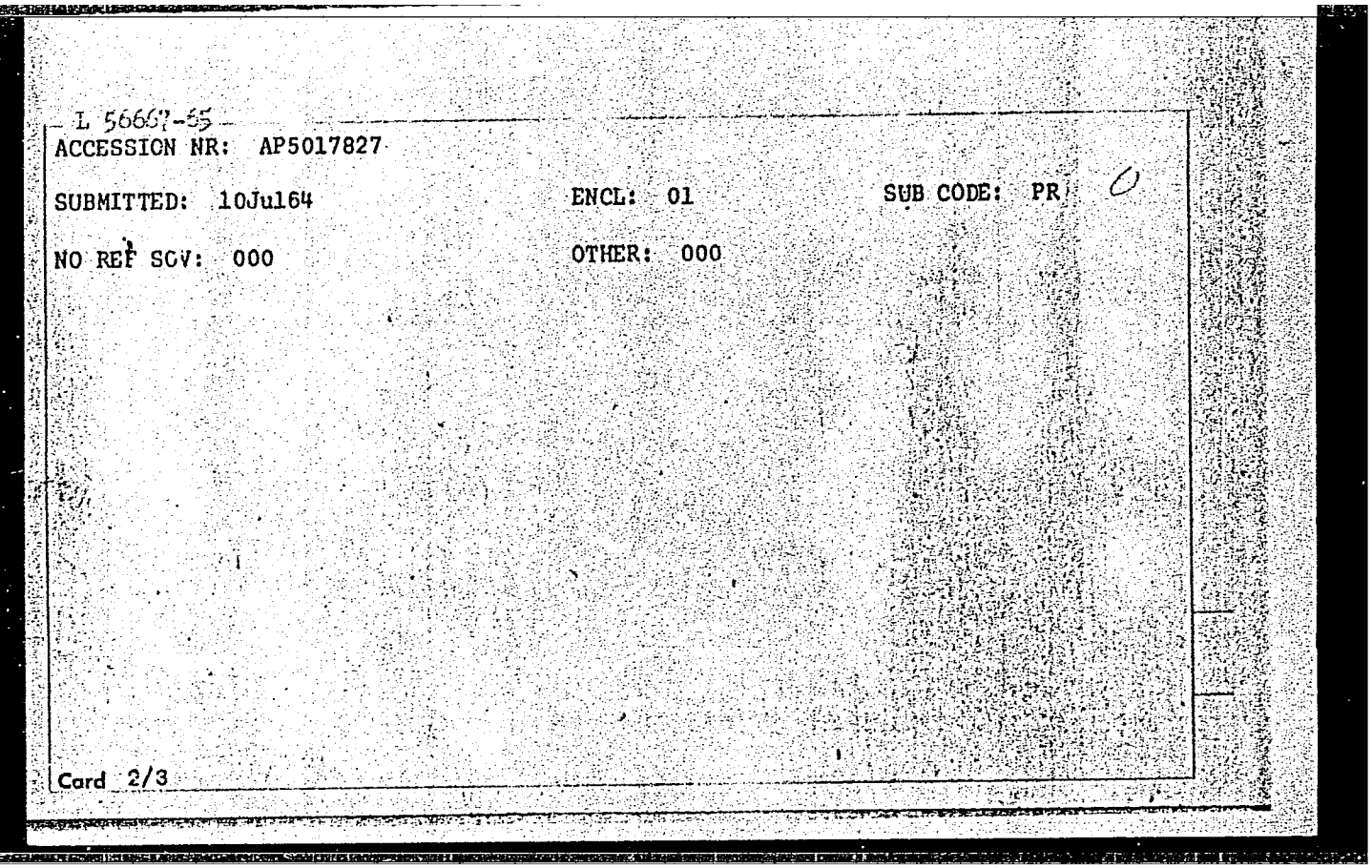
SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 11, 1965, 58

TOPIC TAGS: pump, absorption trap, sorption, zeolite

ABSTRACT: This Author's Certificate introduces an absorption trap for diffusion and mechanical pumps. The device contains absorption elements and an electric heater which is connected during sorbent regeneration. Regeneration time is reduced and the dynamic absorption characteristics are improved by making each absorption element in the form of a metal plate (heat conductor) coated on both sides with a thin porous layer of sorbent, e.g. zeolite.

ASSOCIATION: Khar'kovskiy fiziko-tekhnicheskiy institut AN UkrSSR (Kharkov Physico-technical Institute, AN UkrSSR)

Card 1/3



L 5665?-65
ACCESSION NR: AP5017827

SUBMITTED: 10Jul64 ENCL: 01 SUB CODE: PR O

NO REF SOV: 000 OTHER: 000

Card 2/3

L 56667-65
ACCESSION NR: AP5017827

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ENCLOSURE: 01

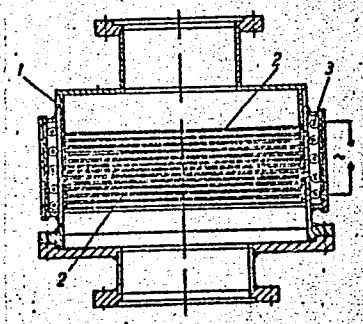


Fig. 1--housing; 2--absorption element; 3--electric heater

Card 3/3

L 3597-66 EWT(m)/T

ACCESSION NR: AP5024048 UR/0057/65/035/009/1666/1671

AUTHOR: Lunev, V.M.; Romanov, A. A. 44,55 44,55

TITLE: Adsorption properties of type-A zeolites at liquid nitrogen temperature

SOURCE: Zhurnal tekhnicheskoy fiziki, v. 35, no. 9, 1965, 1666-1671

TOPIC TAGS: gas adsorption, adsorption pump, high vacuum pump, zeolite

ABSTRACT: In order to assess the possibilities of employing cation-substituted type-A synthetic zeolites in adsorption vacuum pumps, the authors have measured the adsorption capacities and rates of such materials for Ar, N_2, and H_2 at liquid nitrogen temperature and at pressures from 10^{-5} to 10^2 mm Hg. The measurements were undertaken because the data in the literature are mainly for high pressures and for temperatures above the optimum temperature for operation of adsorption pumps. The specimens were obtained by replacing Na^+ ions in synthetic type-A zeolites with Ca^{++} ions or Mg^{++} ions. It was possible to replace up to 89 % of the Na^+ ions with Ca^{++} ions and up to 48 % of the Na^+ ions with Mg^{++} ions. The material was tested in the form of 2 mm diameter pellets from 3 to 13 mm long, bonded with bentonite. Adsorption isotherms were measured by the volume method, and the

Card 1/2

L 3597-66

ACCESSION NR: AP5024048

3

specimens were regenerated by heating under vacuum at 350-400°C and subsequently holding for 2 hours at liquid nitrogen temperature at a pressure of 10^{-7} mm Hg. The experimental technique is described in more detail elsewhere (ZhFKh, 39, 597, 1965). It was found that replacing the Na^{+} ions with Ca^{++} or Mg^{++} ions considerably increased both the adsorption capacity and the adsorption rate. The adsorption rates were greater at high pressures than at low and for molecules of small diameter (H_2) than for molecules of large diameter (Ar). The kinetics of the adsorption process is discussed, and it is concluded that the rate-limiting factor is internal diffusion. Cation substituted type-A zeolites are suitable for reaching pressures below 10^{-7} mm Hg in closed systems, but their low adsorption rates make them less suitable for continuously pumped systems. The fact that the adsorption rate increases with increasing pressure suggests the possibility of using zeolite sorption pumps in the roughing region." "In conclusion, the authors consider it their duty to thank M.F.Fedorova, who participated in discussions of the results obtained." Orig. art. has: 3 formulas, 3 figures, and 1 table.

ASSOCIATION: none

SUBMITTED: 26Oct64 ENCL: 00 SUB CODE: MT, GC, IE

NR REF SOV: 007 OTHER: 003

Card 2/2

ROMANOV, A.A.; UMRIKHIN, P.V.

Improvement of steel structure during the vibration of steel being crystallized. Trudy Ural. politekh. inst. no.93:138-151 '59. (MIRA 15:3)

(Steel ingots) (Crystallization)

GOL'DBERG, G., inzh.; ROMANOV, A., inzh.

Mastics for gluing floor-covering materials. Na stroi.Ros. 3 no.4:28-29 Ap '62. (MIRA 15:9)
(Cement, Adhesive) (Floor coverings)

KOZHEUROV, Petr Il'ich; FORUCHIKOV, Yu.P., kand. tekhn.nauk, retsenzent; ROMANOV, A.A., kand. tekhn.nauk, red.; DUGINA, N.A., tekhn. red.

[Over-all mechanization in foundries]Kompleksnaia mekhanizatsiia v liteinykh tsekhakh. Moskva, Mashgiz. 1962. 286 p. (MIRA 16:2)

(Foundries--Equipment and supplies)

ZOTIN, B.V., inzh.; ROMANOV, A.D.

Construction of the Votkinsk Hydroelectric Power Station - Sverdlovsk 500 kv electric transmission line on reinforced concrete poles. Energ. stroi. no.27:71-76 '62. (MIRA 15:9)

1. Trest "Uralelektroset'stroy" (for Zotin). 2. Glavvostokelektroset'stroy (for Romanov).
(Electric lines--Poles and towers)

ROMANOV, Andrej

Physical chemistry of polymers, an area for long-term research and production. Tech praca 15 no.1:33-34 J '63.

1. Slovenska akademia vied, Bratislava.

L 15257-66 EWT(m)/EWP(j)/T RM
ACC NR: AP5028630 (A,N) SOURCE CODE: UR/0342/65/000/011/0010/0013

AUTHOR: Romanov, A. B. (Deputy chief, Member of Yaroslav branch)

ORG: PTNII

TITLE: Commercial fabrics from combined fibers

SOURCE: Tekstil'naya promyshlennost', no. 11, 1965, 10-13

TOPIC TAGS: textile, textile industry, caprone, dacron, synthetic fiber, textile industry machinery/ K-128 textile industry machinery, K-176 textile industry machinery

ABSTRACT: The Scientific Research Institute of the Rubber Industry, the department of new commercial fabrics of the Yaroslavl Design Technological and Scientific Research Institute, and the "Krasnyy Perekop" Combine have developed a so-called combined fabric. The work was done to overcome some of the disadvantages of synthetic fibers in conveyer belts. The fabric is comprised of Dacron No. 10.7/6 as the warp and cotton yarn No. 12/6 as the weft. The fabric is designed for conveyer belts operating under increased loads. The strength of the fabric (50 x 200 mm) is 640 kg for the warp and 180 kg for the weft. The breaking elongations are 16 and

Card 1/2

L 15257-66
ACC NR: AP5028630

12% (± 3%), respectively. The K-128 and K-176 twisting machines can be used to produce the combined fiber after installation of an additional pair of cylinders. The cotton content should be not less than 40% for the required bonding of the rubber. The results of tests of conveyer belts and hoses show that it is advantageous to use the combined fabric for commercial rubber articles (see Fig. 1).

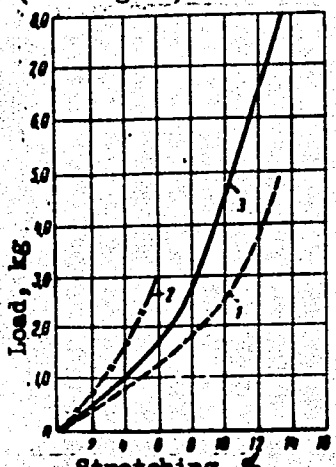


Fig. 1. 1 - capron No. 10.7; 2 - cotton yarn covering; 3 - combined fiber.

Orig. art. has: 1 graph and 1 table.

Card 2/2 SUB CODE: 11/ SUBM DATE: none/ SOV REF: 001/ OTH REF: 001

ROMANOV, A.D., kand. tekhn. nauk; SAPOZHNIKOV, L.M., inzh.

Machinery bases of network constructing and installing enterprises. Energ. stroi. no. 4:66-72 '65. (MIRA 18:12)

ROMANOV, A.D., kand. tekhn. nauk; SAPOZHNIKOV, L.M., inzh.

Manufacture of aluminum panels. Energ. stroi. no.1:82-88 '65.
(MIRA 18:7)

ROMANOV, A.D.

Effect of shifting the center of gravity of a spiral hair spring on the swinging period of the balance wheel. Uch. zap. PPI no.1:27-32 '63. (MIRA 17:2)

ROMANOV, A.D.

Method for regulating the movement of a watch. Izv. vys. ucheb. zav.; prib. 6 no.5:95-102 '63. (MIRA 16:11)

1. Penzenskiy politekhnicheskiy institut.

BOGDANOV, Yuriy Mikhaylovich; STARIKOV, I.S., kand.tekhn.nauk, retsenzent; ROMANOV, A.D., kand.tekhn.nauk, retsenzent; ZAKAZNOV, N.P., kand. tekhn.nauk, red.; KL'KIND, V.D., tekhn.red.; UVAROVA, A.F., tekhn.red.

[Precision instruments] Pribory tochnoi mekhaniki. Moskva, Gos. nauchno-tekhn.izd-vo mashinostroit.lit-ry, 1960. 415 p. (MIRA 14:2)

(Measuring instruments)

ROMANOV, A.D., dots; SOKOLOV, N.N., inzh.

Using a tension of 500 kv. for long-distance power transmission. Elek. sta. 29 no.5:55-59 My '58. (MIRA 12:3)
(Electric power distribution--High tension)

ROMANOV, A.D., inzh.; ZIL'BERMAN, R.I., inzh.

Destruction of 110 kv. electric power transmission line caused by ice in Austria. Energokhoz. za rub. no.6:30-32 N-D '59. (MIRA 13:3)
(Austria--Electric lines--Overhead)

BELYAKOV, Ivan Semenovich; KUNAYEV, I., kandidat tekhnicheskikh nauk, retsenzent; ROMANOV, A.D., inzhener, retsenzent; BOGDANOV, Yu.M., kandidat tekhnicheskikh nauk, redaktor; MATVEYEVA, Ye.N., tekhnicheskiy redaktor; EL'KIND, V.D., tekhnicheskiy redaktor

[Clockworks] Chasovye mekhanizmy. Moskva, Gos.nauchno-tekhn. izd-vo mashinostroit.lit-ry, 1957. 335 p. (MIRA 10:8)
(Clockmaking and watchmaking)

KALININA, V.F.; ROMANOV, A.D.; BRITSKO, K.M., red.; KUPCHE, P.P., tekhn. red.

[Design of the elements for watch mechanisms and devices]Konstruirovanie i raschety elementov chasovykh mekhanizmov i priborov. Penze, TSentr. biuro tekhn. informatsii sovnarkhoza, 1960. 167 p. (MIRA 16:3)
(Glockmaking and watchmaking)

ROMANOV, Aleksandr Danilovich

[There across the English Channel] Tam za La-Manshem. Minsk, Gos.izd-vo BSSR, 1962. 62 p. (MIRA 16:4)
(Great Britain—Description and travel)

ROMANOV, A.D., inzh.; REUT, M.A., inzh.

Construction of electric networks for outdoor electric power supply to the electrified Moscow-Irkutsk Railroad main. Energ.-stroi. no.25:61-71 '61. (MIRA 15:4)

1. Glavnoye upravleniye po stroitel'stvu i montazhu vysokovol'tnykh elektrosetey i podstantsiy Urala i Sibiri Ministerstva stroitel'stva elektrostantsiy SSSR.
(Electric railroads--Current supply)

ROMANOV, A. F.

Chemistry - Study and Teaching

Study of the periodic law and atomic structure in the 10th class. Khim. v shkole No. 4, 1952.

9. Monthly List of Russian Accessions, Library of Congress, December 1952 1953, Uncl.

ROMANOV, A.G., (Moskva)

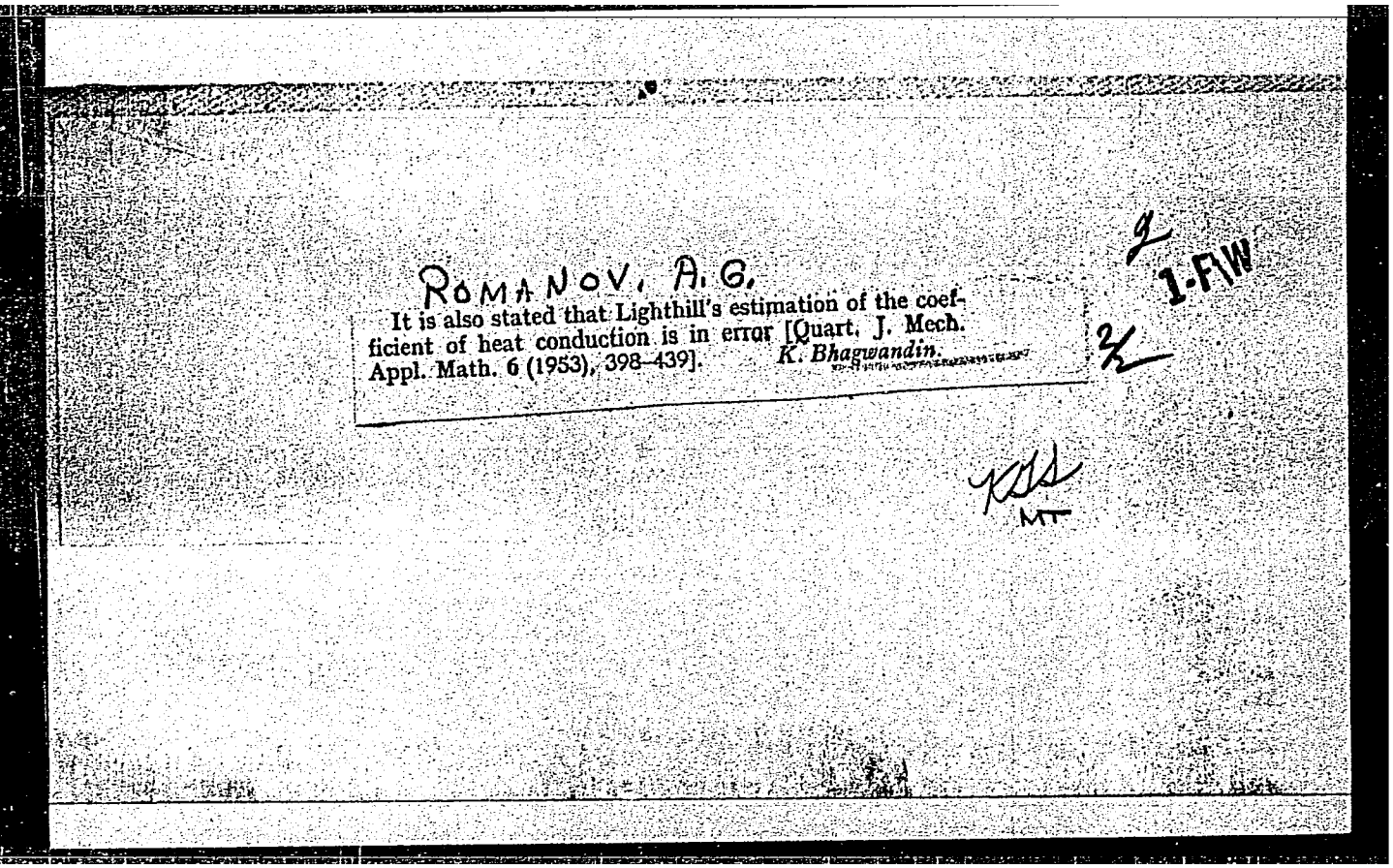
Investigating heat exchange in a dead-end duct under natural convection conditions. Izv. AN SSSR. Otd. tekh. nauk no.6: 63-76 Je '56. (MLRA 9:9)

(Heat--Convection)

ROMANOV, A. G.

Romanov, A. G. Investigation of heat exchange in a dead-end channel in the case of natural convection. Izv. Akad. Nauk SSSR. Otd. Tehn. Nauk 1956, no. 6, 63-76. (Russian)

The solution to the problem of the title is obtained by means of the methods of 1) similitude and dimensional analysis, and 2) integral equations of boundary-layer theory. The physical problem at hand satisfies a system of ten non-linear partial differential equations of the second order, on account of the fact that the fluid is viscous as well as compressible. At our present state of knowledge, however, these equations can not be solved to any reasonable degree of accuracy, and, therefore, the author resorts to various tolerable approximations. Unfortunately, however, the details of the analysis and the appropriate derivations are not presented (perhaps they can be found in a book (not available) by G. A. Ostroumov [Natural convection under conditions of an internal problem. Moscow, 1952]. The results of the experimental measurements seem to be in good agreement with the author's theory (not available). Comparisons with other experimental and theoretical investigations are also made. Complete details of the author's experimental set-up are given.



ROMANOV, A. G.

It is also stated that Lighthill's estimation of the coefficient of heat conduction is in error [Quart. J. Mech. Appl. Math. 6 (1953), 398–439]. *K. Bhagwandin.*

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MT

ROMANOV, A. O.

4985. INVESTIGATION OF HEAT TRANSFER IN A CHANNEL WITH CLOSED END UNDER CONDITIONS OF NATURAL CONVECTION. Romanov, A.O. (Izv. Akad. Nauk SSSR, Otdel. Tekh. Nauk (Bull. Acad. Sci. U.S.S.R., Sect. Tech. Sci.), June 1956, 63-76). A theoretical and experimental investigation is reported in connexion with the cooling of hollow gas turbine blades.

Phys 1

Romanov, A. G.

USSR/Hydromechanics. Viscous fluids, boundary layers and heat transfer. Heat transfer.

Abs Jour: Ref Zhur - Mekhanika, No 7, 1957, 8003

Author : A. G. Romanov
Inst :
Title : Investigation of Heat Exchange in a Blind Conduit Under Natural Convection Conditions

Orig Pub: Izv. AN SSSR Otd. tekhn. n., 1956, No 6, pp 63-76

Abstract: The article examines heat exchange of an incompressible fluid in a blind cylindrical conduit under natural convection conditions. The problem is limited to investigating conduit portions with established flow and open boundary layer (presence of a stream core). With relation to his adopted physical scheme of flow, the author presents in integral form equations for the boundary layer in the case of laminar and turbulent conditions on the assumption of unchanging physical constants, absence of dissipation and axi-symmetry of

Card 1/2

ROMANOV, A.I., inzhener LAS; KLIMOV, V.Ya., general-mayor, Geroy sotsialisticheskogo truda, glavnyy konstruktor motorov; BALANDIN, V.P., general-mayor LAS.

[The VK-107A and VK-108 airplane engines] Aviatsionnye motory VK-107A i VK-108. Moskva, Gos. izd-vo oboronnoi promyshlennosti, 1946. 112 p. [Microfilm] (MLRA 7:11)
(Airplanes--Engines)

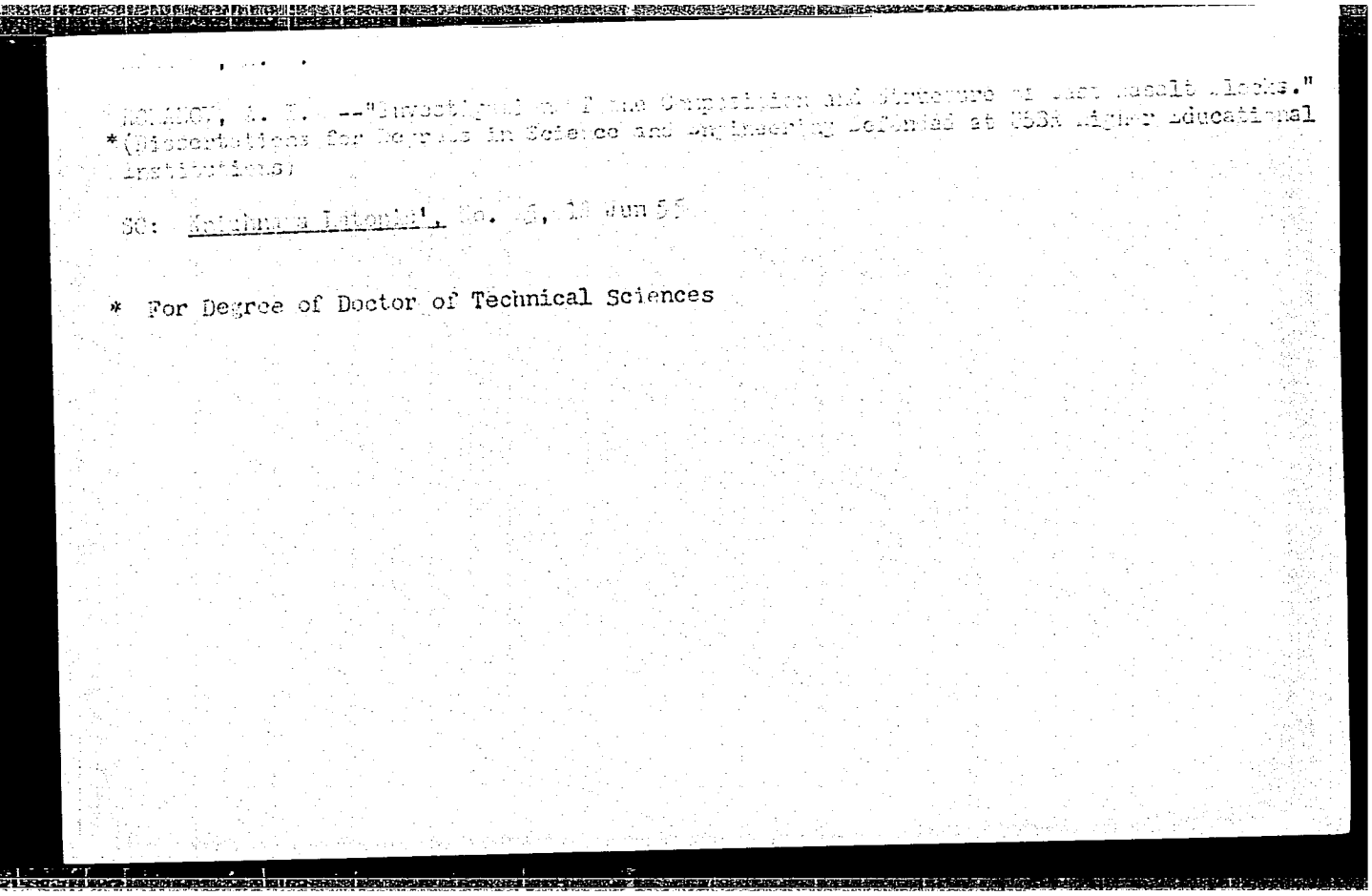
ROMANOV, A.I., dots., kand. tekhn. nauk.

Technical and chemical inspection in mobile laboratories. Trudy MTIPP no.7:184-189 '57. (MIRA 10:12)
(Grain--Standards) (Laboratories)

Romanov, A.I.

ROMANOV, A.I., dots., kand. tekhn. nauk.

Investigating the operation of the feed mechanism of a roller mill. (MIRA 10:12)
Trudy MTIPP no.9:120-138 '57.
(Grain-milling machinery)



[illegible], L. T. --"Investigation of Time Computation and Structure of Fast Result Blocks." *(Dissertations for Degree in Science and Engineering Defended at USSR Higher Educational Institutions)

SO: Knizhnaya Letopis', No. 26, 28 Jun 55

* For Degree of Doctor of Technical Sciences

TARUSIN, P. I. and ROMANOV, A. I.

"The organization of mechanized coal mining in No. 5 Trudovskaya Pit," Mechanization of Labor Consuming and Heavy Work, 1951.

GARBER, I.B., inzhener; ROMANOV, A.I., inzhener.

Insulation of tool handles. Energetik 1 no.1:18-19 Je '53. (MLRA 6:8)
(Electric insulators and insulation)

1. GARBER, I. B.; ROMANOV, A. I.; Engs.

2. USSR (600)

4. Vulcanization

7. Restoring the insulation of electrically welded wires by the method of hot vulcanization. Rab. energ. 3, No. 4, 1953.

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

ROMANOV, A. I.

AID P - 666

Subject : USSR/Electricity

Card 1/1 Pub. 29 - 1/24

Authors : Garber, I. B., Eng. and Romanov, A. I., Eng.

Title : Training of repair crews

Periodical : Energetik, 7, 1-3, Jl 1954

Abstract : The organization and some points of the training program are described as an example of education of the technical personnel of electric power plants and power engineering developments. One photo.

Institution : None

Submitted : No date

AID P - 3403

Subject : USSR/Electricity

Card 1/1 Pub. 29 - 18/30

Authors : Garber, I. B., and Romanov, A. I., Engs.

Title : Movable transformer for starting motors for balancing and rolling operations

Periodical : Energetik, 10, 25, 0 1955

Abstract : The author describes a movable transformer made according to the proposals of section and workshop chiefs for the dynamic balancing of high voltage motors. This operation requires a great number of starts and disconnections. The same transformer is also used for the rolling of high voltage motors.

Institution : None

Submitted : No date

DUBNOV, L.V.; ROMANOV, A.I.

Initiation of the ignition of high explosives by a detonation impulse. Vzryv. delo no.52/9:179-186 '63. (MIRA 17:12)

1. Mezhduvedomstvennaya komissiya po vzryvnomu delu.

SHLYAKHTIN, Ye.I.; ZHOROVA, A.G.; ANANCHENKO, M.V.; GRISHUTIN, V.G.; IVANOV, V.I.; DORONIN, A.A.; POPOVA, M.S., inzh.; TARASENKO, I.I.; ROMANOV, A.I.; ZHUKOV, A.V.; LAPTEV, G.I., inzh.

Who should perform the forwarding and carrier services? Zhel. dor. transp. 45 no.6:42-45 Je '63. (MIRA 16:7)

1. Zamestitel' nachal'nika stantsii Smolensk Moskovskoy dorogi po gruzovoy rabote (for Shlyakhtin). 2. Nachal'nik pogruzkontory stantsii Smolensk Moskovskoy dorogi (for Zhorova). 3. Zaveduyushchiy gruzovym dvorom stantsii Smolensk Moskovskoy dorogi (for Ananchenko). 4. Nachal'nik tovarnoy kontory stantsii Smolensk Moskovskoy dorogi (for Grishutin). 5. Zaveduyushchiy konteynernoy ploshchadkoy stantsii Smolensk Moskovskoy dorogi (for Ivanov). 6. Sekretar' partiynogo byuro stantsii Smolensk Moskovskoy dorogi (for Tarasenko). 7. Stantsiya Smolensk Moskovskoy dorogi (for Doronin, Romanov, Popova). 8. Upravlyayushchiy Smolenskim oblastnym avtotrestom (for Zhukov).

(Freight and freightage)

KRASNOGOLOVTSEV, Vasiliy Semenovich; ROMANOV, A.I., retsenzent; CHISTYAKOVA, L.G., inzh., red.; GORNOSTAYPOL'SKAYA, M.S., tekhn. red.

[Nut-cutting equipment] Gakonareznoe oborudovanie. Moskva, Mashgiz, 1963. 145 p. (MIRA 16:5)
(Screw-cutting machines) (Bolts and nuts)

ROMANOV, A.I.

New method for the suspension of classification sifters. Trudy MTIPP 16:185-188 '60. (MIRA 16:6)

(Sieves)

ROMANOV, A.I.

Apparatus for grain sampling. Trudy MTIPP 16:189-196 '60.
(MIRA 16:6)

(Grain handling machinery)
(Sampling)

MOROZENKO, Semen Nikitovich; ROMANOV, A.I., inzh., retsenzent; NIKIFOROVA, R.A., inzh., red.; GORNOSTAYPOL'SKAYA, M.S., tekhn. red.

[Pocket manual for lathe operators] Karmannyi spravochnik tokaria. Moskva, Mashgiz, 1962. 255 p. (MIRA 15:7)
(Turning)

SVIRIDENKO, Sergey Kharitonovich; BARAB-TARLE, Matus' Yelevich; MIZHEVSKIY, Lev Leonidovich; RASHKOVICH, Mikhail Pavlovich; SRIBNER, Leonid Andreyevich; SHRAGO, Leonid Konstantinovich; ORLIKOV, M.L., kand. tekhn. nauk, retsenzent; ROMANOV, A.I., inzh., red.; BYKOVSKIY, A.I., inzh., red.; GORNOSTAYPOL'SKAYA, M.S., tekhn. red.

[Program control of jig drilling machines]Programmnoe upravlenie koordinatno-sverlil'nymi stankami. Moskva, Mashgiz, 1962. 87 p. (MIRA 15:9)
(Drilling and boring machinery--Numerical control)

ROMANOV, A.I.

Shaping internal screw threads by embossing. Mashinostroenie no.2:127 Mr-Ap '62. (MIRA 15:4)
(Screw cutting)

GARBER, Il'ya Borisovich, ZHILINA, Ol'ga Vladimirovna, ROMANOV, Aleksandr Ivanovich, KOROL'KOV, I.I., red.; ZABRODINA, A.A., tekhn.red.

[Experience in the centralized repair of electrical equipment at electric power stations of the Leningrad Regional Power Authority]. Iz opyta tsentralizovannogo remonta elektrooborudovaniia na elektrostantsiiakh Lenenergo. Moskva, Gos. energ.izd-vo, 1956. 70 p. (MIRA 11:9)

(Electric apparatus and appliances--Maintenance and repair)

ROMANOV, A. K.

"Organization of the Utilization of Natural Pastures in Kolkhozes of Tadzhikistan." Cand Agr Sci, Moscow Acad of Agriculture Stalinabad, 1953. (RZhBiol, No 1, Sep 54)

SO: Sum 432, 29 Mar 55

ROMANOV, A.K.

Stability of a push-pull magnetic shift register. Nauch. dokl. vys. shkoly; radiotekh. i elektron. no.2:303-310 '59. (MIRA 14:5)

1. Moskovskiy elektrotekhnicheskiy institut svyazi.
(Pulse techniques (Electronics))

ROMANOV, Arnol'd Konstantinovich; KRAVCHENKO, L.S., red.;
YELISTRATOVA, Ye.M., tekhn. red.

[Ferrite cores with rectangular hysteresis loops and their applications] Ferritovye serdechniki s priamougol'noi petlei gisterezisa i ikh primenenie. Novosibirsk, Izd-vo Sibirskogo otd-niia AN SSSR, 1963. 84 p. (MIRA 17:2)

SOV/106-59-10-6/11

AUTHOR: Romanov, A. K.

TITLE: Operation of a "Single-Stroke" Magnetic Shift Register with Simultaneous Re-Magnetization of Auxiliary Cores

PERIODICAL: Elektrosvyaz', 1959, Nr 10, pp 43-51 (USSR)

ABSTRACT: The article first describes how the properties of the rectangular hysteresis loops of the core magnetic material are used in magnetic shift registers. The operation of the circuit shown in Fig 1 is described. In practice, such circuits can be used in the role of logical circuits by using the shift register to re-magnetize the auxiliary cores 1, 2, .. N. This circuit is then investigated analytically to obtain engineering design formulae. The procedure adapted is to consider the circuit over two periods of time: 1) during the time the capacitor C is charging, and 2) during the time it is discharging. The actual circuit is replaced by its equivalent circuits (Fig 2 and Fig 4). Fig 2 is applicable during the time $0 \leq t \leq T_2$ where T_2 is the re-magnetization time of any of the cores 1, 2, .. N. (In Fig 2b, $R_{,1}$ is the equivalent resistance

Card 1/4

Operation of a "Single-Stroke" Magnetic Shift Register with Simultaneous Re-Magnetization of Auxiliary Cores

of all the resistances in the left hand side of Fig 2a). The equivalent circuits for the discharge period ($T_2 \leqslant t \leqslant T_A$ where T_A is the re-magnetization time of core A) are shown in Fig 4. The formulae obtained are applied to an example. To find the elements for the circuit shown in Fig 1, given the following data: ferrite cores with cross-sectional areas $S_A = 0.03$ cm^2, $S_1 = 0.036$ cm^2; residual flux densities, $B_{S1} = 2700$ gauss, $B_{SA} = 2600$ gauss; magnetizing force, $H_c = 0.4$ oesteds; $N = 2$; mean magnetic length of the cores, $\ell = 1.5$ cm. (The suffix A refers to cores A and B; the suffix 1 to cores 1, 2.) Germanium point diodes are used, the diode impedance $R_{d1} = 120$ ohms. The driving pulses are obtained from a blocking oscillator and give a pulse current of 2A. From the curve $T_n = f(Iw_T)$, it is known that with a re-magnetizing field $H_m = 4\ H_c = 2.4$ AT/cm, the cores are re-magnetized over a period of 3.5 and 4.0 μSec respectively. (The symbols used are as shown in Figs 1, 2 and 3.) The design procedure is as follows:

Card 2/4

Operation of a "Single-Stroke" Magnetic Shift Register with Simultaneous Re-Magnetization of Auxiliary Cores

1. From Eq (1) (obtained from references 4 and 5), R_A and R_1 are determined
   $R_A = 0.23$ ohm and $R_1 = 0.254$ ohm
2. Taking $Iw_T/l = 17\ H_c$, $w_T = 5$ turns.
3. $T_2 = 0.65$ μSec and the discharge time $T_p = 23$ μSec.
4. The value $k = \frac{w_1}{w_2}$ is determined from formula (14): $k = 6$
5. Assuming that $\gamma = 0.5$, $R_{\gamma 1}$ is found from expression (2)
   $R_{\gamma 1} = 0.9$ ohm
6. $k_3 = \frac{w_3}{w_T}$ is calculated from formula (18):
   $k_3 = 10.3$; $w_3 = 52$ turns $= w_4$
7. Let $R + R_{\gamma 1} = 220$ ohm, ($R = 100$ ohm). Then in accordance with formula (16):
   $w_2 = 15$ turns

Operation of a "Single-Stroke" Magnetic Shift Register with Simultaneous Re-Magnetization of Auxiliary Cores

8. U_{c0} (the voltage on the capacitor C at time T_2) is found from Eq (27) and the value of C from Eq (19):

$$V_{c0} = 10.5 \text{ V}; \quad C = 55{,}000 \text{ pf}$$

9. By formula (28), the value T_A is found

$$T_A = 9.6 \ \mu\text{Sec}$$

The circuit shown in Fig 6 was used to check the calculations, and the results showed that the formulae are sufficiently accurate for use in engineering design. There are 8 figures and 7 references, 2 of which are Soviet and 5 English.

SUBMITTED: February 4, 1959

Card 4/4

PUSHNOY, B. M.; ROMANOV, A. K.; ZINITSYN, B. S.

"Measurements and Cybernetics"
Report submitted at the Third Conference on Automatic Control and Electrical Measurement Methods was held at Novosibirsk, 19-23 Sept. 1961.

ROMANOV, A.K.

Possibility for using a pulse filter for generating electric signals of a given shape. Izv.Sib.otd.AN SSSR no.5:105-107 '60.
(MIRA 13:7)

1. Institut avtomatiki i elektrometrii Sibirskogo otdeleniya AN SSSR.

(Oscillators, Electric)
(Electric filters)

ROMANOV, A.K.

Use of ferrite cores with rectangular hysteresis loops in noncontact printing devices. Avtom. kont. i elek. izm. no.2: 123-136 '60. (MIRA 15:3)
(Electronic calculating machines--Input-output equipment)
(Recording instruments)
(Magnetic memory (Calculating machines))

ROZANOV, A. K.

Dissertation defended for the degree of Candidate of Technical Science at the Joint Scientific Council on Physicomathematical and Technical Sciences; Siberian Branch

"Several Problems of the Use of Ferrite Cores Exhibiting Squarewave Hysteresis Loop."

Vestnik Akad. Nauk, No. 4, 1963, pp 119-145

L 9999-63 BDS/EEC(b)-2--AFFTC/ASD/ESD-3/RADC/APGC--Pg-4/Pl-4/Po-4/Pq-4

ACCESSION NR: AP3001131 S/0108/63/018/006/0071/0075

75

AUTHOR: Romanov, A. K.

TITLE: Evaluating the structural reliability of electronic systems

SOURCE: Radiotekhnika, v. 18, no. 6, 1963, 71-75

TOPIC TAGS: electronic system reliability

ABSTRACT: Ordinary probabilistic evaluation of reliability fails to assess the role played by various elements in the system. If a system includes a number of similar elements, the effect of failure of one of them will depend on the place of the element in the structure. The most reliable structure can tolerate failure of anyone of its elements; its reliability factor is 1. The least reliable structure will collapse on failure of anyone of its elements, and its reliability factor is 0. The reliability factor is mathematically determined in terms of system parameters. The proposed method is considered as an addition tc the existing reliability-evaluation methods. "The author wishes to express his sincere thanks to Candidates of Technical Sciences M. P. Tsapenko and G. A. Shtamberger and also to Engineer V. I. Rabinovich for their valuable comments on this work." Orig. art. has: 10 formulas and 1 figure.

Card 1/1

ACCESSION NR: AP4031674 S/0286/64/000/005/0035/0035

AUTHOR: Romanov, A. K.; Tkach, S. Ye.

TITLE: Device for the recording of ballistocardiograms. Class 30, No. 160795

SOURCE: Byulleten' izobreteniy i tovarny*kh znakov, no. 5, 1964, 35

TOPIC TAGS: ballistocardiogram, ballistocardiography

ABSTRACT: This device for the recording of ballistocardiograms, consisting of two identical channels which include sensors, amplifier stages, integrating networks and cathode followers, is distinguished by the fact that, in order to exclude from the ballistocardiogram interference caused by the shaking of the ballistocardiograph platform, a subtraction circuit, the output of which is connected to the recording device, is installed at the output of the channels. Orig. art. has: 1 figure.

ASSOCIATION: INSTITUT AVTOMATIKI I ELEKTROMETRII SIBIRSKOGO OTDELENIYA AN SSSR (Institute for Automation and Electrometry, Siberian Branch, AN SSSR)

SUBMITTED: 19Apr63 ATD PRESS: 3063 ENCL: 01

Card 1/2 SUB CODE: EC, AS NO REF SOV: 000 OTHER: 000

ACCESSION NR: AP4031674

ENCLOSURE: 01

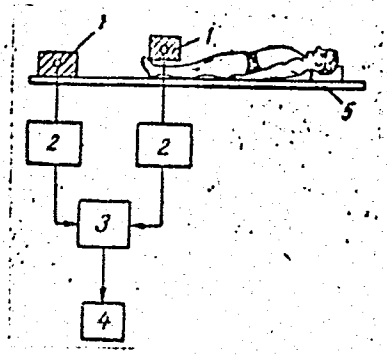


Fig. 1. Ballistocardiogram recorder

1 - Sensors; 2 - amplifier stages; 3 - subtraction unit; 4 - recording device; 5 - ballistograph platform.

Card 2/2

ACCESSION NR: AP4040459 S/0108/64/019/006/0040/0044

AUTHOR: Romanov, A. K.; Zelentsov, B. P.

TITLE: Generation of functions

SOURCE: Radiotekhnika, v. 19, no. 6, 1964, 40-44

TOPIC TAGS: function generation, function oscillator, pulse filter, delay element, multiplying unit, adder, ferrite core, rectangular hysteresis loop, autocorrelation function, cross correlation function

ABSTRACT: A method of reproducing mathematical functions in the form of electrical signals, which is based on the utilization of a pulse' filter, is discussed. The block diagram of the filter is shown in Fig. 1 of the Enclosure. It consists of a series of delay elements each of which delays for time τ the voltage applied to filter input. The output voltage of each delay element is transmitted to the multiplying unit where it is multiplied by constant coefficient a_v. From the outputs of the multiplying units the voltages pass to the adder, forming the sum

$$U_{out} = \sum_{v=0}^{m-1} a_v U(t - v\tau),$$

Card 1/3

USSR/Microbiology - Microbes Pathogenic for Man and Animals. F
Brucellae

Abs Jour : Ref Zhur Biol., No 22, 1958, 99436

Author : Ivanov, M.M., Romanov, A.M., Levina, I.G.

Inst : State Scientific Control Institute of Veterinary Preparations.

Title : Study of the Biological Properties of the Strain #19 in Comparison with Other Brucella Strains.

Orig Pub : Tr. Gos. Nauchno-kontrol'n. in-ta vet. preparatov, 1957, 7, 12-19

Abstract : It was established that the vaccinial strain of Brucella bovis #19 possesses a well-consolidated type and biological properties which do not change following triple passage of the strain through the organism of sheep or guinea pigs. It was also demonstrated that this strain

Card 1/2

USSR/Microbiology - Microbes Pathogenic for Man and Animals. F
Brucellae

Abs Jour : Ref Zhur Biol., No 22, 1958, 99436

possesses residual virulence. A rapid spread of Brucella occurs in the organism following the infection of guinea pigs with doses of 1-100,000 microbe bodies. Within 30-35 days following the infection no Brucella are found in the majority of the cases in the internal organs, and only occasionally are they isolated from the regional lymph nodes. The organism of the vaccinated animals frees itself rapidly of Brucella, acquiring under these circumstances immunity to virulent strains of Brucella of the type bovis and melitensis. The strain Br. suis #55, administered to sheep in doses of 5 and 10,000,000,000 microbe bodies confers immunity to brucellosis, but the biological properties of the strain are not consolidated. -- G.Ye. Frunkina

Card 2/2

Country : USSR
Category : Diseases of Farm Animals. R
Diseases Caused by Bacteria and Fungi.
Abs. Jour : Ref Zhur-Biol., No 21, 1958, 96969

Author : Ivanov, M. M.; Romanov, A. M.
Institut. : State Scientific Control Institute of Veteri-*
Title : The Problem of Vaccinating Sheep and Cattle against Brucellosis with the No 19 Vaccine.

Orig Pub. : Tr. Gos. nauchno-kontrol'n. in-ta vet. preparatov, 1957, 7, 26-40
Abstract : In laboratory and industrial tests it was shown that dry live vaccine of the No 19 strain is harmless and creates immunity in sheep to subsequent infection with brucellosis cultures of the melitensis and bovis types which was preserved for 3, 5, 7 months (checking time). The intensity of immunity in vaccinated sheep is found to be directly dependent on the dosage and manner of introduction of the vaccine. The subcutaneous introduction of the vaccine

Card: 1/2

*nary Preparations.

5

COUNTRY : USSR R
CATEGORY : Diseases of Farm Animals. Diseases Caused by Bacteria and Fungi.
ABS. JOUR. : RZhBiol., No. 6 1959, No. 25975

AUTHOR : Ivanov, ...N.; Orlov, Ye.S.; Ivanov, A.I.;*
INST. : State Scientific Control Institute of Veteri**
TITLE : Experimental Trial of the Activity of Four Vaccines Against Brucellosis.

ORIG. PUB. : Tr. Gos. nauchno-kontrol'n. in-ta vet. preparatov, 1957, 7, 41-46

ABSTRACT : Immunogenic properties of glycerinated vaccine from strain No.3 (I), formol-hydroxy-aluminum vaccine strain No.66 (II), live vaccine strain No.61 (III), and live dry vaccine strain No.19 (IV) were tried on sheep. Of the sheep vaccinated

*Goryakova, O.J.; Prudentov, S.N.; Ivanova, V.I.; Uzunov, N.N.
**inary Preparations

CARD: 1/2

TITLE :

ORIG. PUB. :

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001445220006-7"

ABSTRACT cont'd. : with I, immunity was established in 20% of animals, and in sheep vaccinated with II, in 40% of heads. The sheep vaccinated with III exhibited complete resistance to artificial infection by brucellosis. In sheep vaccinated with IV with doses of 5 and 25 billion Brucellae, immunity was established in 90 and 100% of cases respectively.-- L.S.Kirichenko.

CARD: 2/2

USSR/Diseases of Farm Animals. Diseases Caused by Bacteria and Fungi R-2

Abs Jour: Ref Zhur - Biol., No 1, 1959, 2815

Author : Ivanov, M. M., Romanov, A. M.
Inst : State Scientific Control Institute of Veterinary Preparations.
Title : The Significance of Brucella Type Specificity in Allergic Diagnoses of Brucellosis

Orig Pub: Tr. gos. nauchno-kontrol'n. in-ta vet. vet. preparatov, 1957, 7, 54-56

Abstract: In tests performed by the authors, sheep experimentally infected with Brucella melitensis (No 74 strain) were on the 35th day injected with a specific brucellizate type prepared from brucella of the same type and the same strain into one subcaudal fold, and with a standard brucellizate prepared from Br. suis (No 22 strain) into the other fold. It was found that more sheep reacted to the first brucelli-

Card 1/2

USSR/Diseases of Farm Animals. Diseases Caused by Bactoria and Fungi R-2

Abs Jour: Ref Zhur - Biol., No 1, 1959, 2815

Abstract: zate and that with it the reactions were better defined. Analogous phenomena were observed when specific types and standard brucellizates were tested on sheep which were naturally sick with brucellosis. It was also established that within the same type, allergen activity depends also on the strain. Thus, brucellizates prepared from strain Br. suis No 22 proved to be more active than brucellizates prepared from strain Br. suis No 55. Results obtained with allergic reactions and with BSR /blood serum reaction/ were most nearly identical when the most active allergens were used. -- L. S. Goberman

Card 2/2

L 7233-66 EWT(1)/ETC(m) WW

ACC NR: AP5025910 SOURCE CODE: UR/0057/65/035/010/1910/1911

44,55 44 55 44 55 34 B

AUTHOR: Gorodinskiy, G.M.; Damaskinskiy, Ye. A.; Romanov, A.M.

44,55

ORG: Physicotechnical Institute im. A.F.Ioffe, AN SSSR, Leningrad (Fiziko-tekhnicheskiy institut AN SSSR)

21, 44, 55

TITLE: On recording several particles with an acoustical spark chamber

SOURCE: Zhurnal tekhnicheskoy fiziki, v. 35, no. 10, 1965, 1910-1911

TOPIC TAGS: spark chamber, particle detector, plane geometry

ABSTRACT: It is shown that one can uniquely determine the position of a point in a plane provided one knows the distance of the point from each of three fixed points in the plane and, that if the distances are subject to small experimental errors, the probability of mislocation can be reduced by employing more fixed points. The contemplated application is to the location of a spark in a spark chamber from measurements of the time of occurrence of the spark and the times of arrival of the resulting shock wave at several microphones. Despite the title of their letter, the authors do not discuss the confusion that can arise when several sparks occur simultaneously or nearly so. References are given to descriptions of several microphones which are believed to be suitable for the contemplated application. Orig. art. has: 1 formula

SUB CODE: NP, MA/ SUBM DATE: 06Apr65/ ORIG REF: 000/ OTH REF: 004

Card 1/1 UDC: 539.107.49

0101 1698

ACC NR: AP7000526 SOURCE CODE: UR/0048/66/030/011/1791/1793

AUTHOR: Chuykin, Ye. I.; Romanov, A. M.; Lenin, A. S.

ORG: Physico-technical Institute im. A. F. Ioffe, SSSR Academy of Sciences (Fiziko-tekhnicheskiy institut, Akademii nauk SSSR)

TITLE: Measuring the vertical intensity of hard γ-quanta at various atmospheric depths /Paper presented at the All-Union Meeting on Physics of Cosmic Radiation held in Moscow from 15-20 November 1965/

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v. 30, no. 11, 1966, 1791-1793

TOPIC TAGS: gamma radiation, upper atmospheric radiation, radiation measurement, telescope, gamma quantum

ABSTRACT: A special γ-telescope shown in Fig. 1 was designed for measuring the vertical intensity of γ-quanta with $E > 70$ Mev at various atmospheric heights. It consists of a scintillation detector with a 12-mm thick CsI(Tl) crystal and a total-absorption Cherenkov counter, both of which are connected in a coincidence circuit. The CaI(Tl) crystal simultaneously serves to convert γ-quanta into electron-positron pairs. A plastic scintillator, connected in an anticoincidence circuit, shields the telescope from charged particles. Electron discrimination is employed to exclude possible noise from neutron "stars". The

Card 1/4

coincidence circuit is protected from signals resulting from bursts in CsI which exceed the value of a burst caused by a μ-meson during its

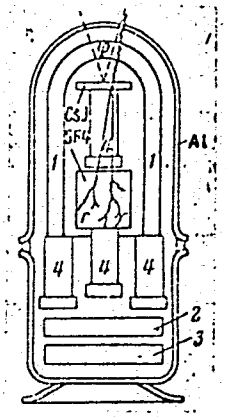


Fig. 1. Schematic drawing of the telescope

1 - Plastic scintillator; 2 - power supply block; 3 - electric circuits; 4 - photoamplifier (FEU-13)

passage through the CsI crystal perpendicularly to the plane of the plate. Geometrical factor Γ of the telescope is determined by the radiation pattern and the effective area of the system. The average value of Γ is 2 +0.15 cm^2 sterad. The lower energy threshold of recorded γ-quanta is determined by a discriminator in the channel of the

Cherenkov radiator. The threshold value was determined by the calibration of the radiator on a synchrotron and a meson telescope. The threshold was established from the ratio of signals from γ-quanta and

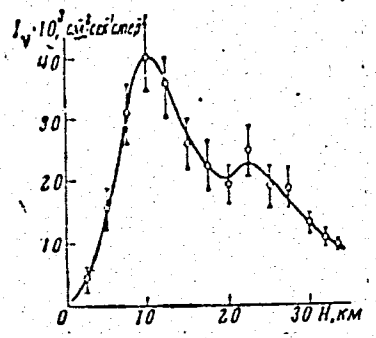


Fig. 2. Vertical intensity of γ-quanta with E > 100 Mev versus altitude

μ-mesons. The efficiency of recording γ-quanta by the telescope depends on the efficiency of pair formation in CsI and on the threshold of a differential discriminator in the CsI channel. For E_γ = 100 Mev this efficiency was 0.25 +0.08. Transistors and tunnel diodes are used in all the components. The averaged results of balloon measurements conducted at a geomagnetic latitude of 40° and atmospheric depths of

ACC NR: AP7000526

7, 8, and 12 mbar are illustrated in Fig. 2. The maximum of the curve is observed at latitudes of 10—20 km and corresponds to I_{max} = 40 x x 10-3 cm-2.sec-1.sterad-1. Orig. art. has: 3 figures and 2 tables.
[WA-75]
[JR]

SUB CODE: 18, 20/ SUBM DATE: none/ OTH REF: 004

Card 4/4

STARODUBTSEV, S.V.; ROMANOV, A.M.; KOGAN, N.M., red.

[Interaction of gamma radiation with matter] Vzaimodeistvie gamma--izlucheniia veshchestvom. Tashkent, Izd-vo "Nauka" UzSSR. Pt.1. 1964. 248 p. (MIRA 18:5)

L 1582-66 EWT(m) DIAAP

AM5018096 BOOK EXPLOITATION UR/

Starodubtsev, S. V.; Romanov, A. M.

Interaction of gamma radiation and matter. pt. 1: Sources of gamma radiation and elementary processes of the interaction of gamma rays and matter (Vzaimodeystviye gamma-izlucheniya s veshchestvom. ch. 1: Istochniki gamma-izlucheniya i elementarnyye protsessy vzaimodeystviya gamma-luchey s veshchestvom) Tashkent, Izd-vo "Nauka," 1964. 248 p. illus., biblio., tables. (At head of title: Akademiya nauk Uzbekskoy SSR. Institut yadernoy fiziki) 2200 copies printed.

TOPIC TAGS: electromagnetic wave scattering, gamma radiation, gamma ray absorption, gamma ray attenuation, hard electromagnetic radiation, pair theory, pair production

PURPOSE AND COVERAGE: This book is intended for researchers, scientists, and engineers concerned with nuclear and radiation physics. The book deals with processes connected with the penetration of hard electromagnetic radiation through matter and gamma ray transition and secondary radiation. The results of calculations and experimental research are given in a form convenient for practical use. No personalities are mentioned.

Card 1/2

L 1582-66
AM5018096

TABLE OF CONTENTS ;

SUB CODE: NP SUBMITTED: 08Dec64 NO REF SOV: 057

OTHER: 196

dg

Card 2/2

L 4471-66 EWT(1)/EWT(m)/FCC/T/EWA(h) IJP(c) GW

ACC NR: AP5024631 SOURCE CODE: UR/0048/65/029/009/1672/1675

23
22
23

AUTHOR: Bel'skiy, S.A.; Romanov, A.M.

ORG: none

TITLE: Angular dependence of the neutron-producing charged component of cosmic rays /Report, All-Union Conference on Cosmic Ray Physics held at Apatity 24-31 August 1964/

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v. 29, no. 9, 1965, 1672-1675

TOPIC TAGS: cosmic ray particle, cosmic ray anisotropy, particle production, neutron

ABSTRACT: The authors have measured the dependence on zenith angle of the intensity of the charged neutron-producing component of the cosmic rays. The charged cosmic-ray particles were recorded with a telescope consisting of a 1 m diameter semicircle of 45 counters connected in 15 channels of 3 counters each and an inner concentric circle of 30 counters. The neutrons produced in a 12 cm diameter 29 cm long cylindrical absorber of Pb, Cu, or Al were moderated in two cylindrical shells of paraffin and detected by a circle of 18 boron-containing counters. The inner and outer diameters of the paraffin moderators were 12.6 and 19.6, and 36 and 68 cm, respectively. Neutrons detected during 180 microsec following passage of a charged particle were recorded in the corresponding channel. The apparatus was mounted on a rotating platform at an undisclosed station where the atmospheric depth is 1030 g/cm^2. No azimuth dependence was

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L 4471-66

ACC NR: AP5024631

detected. The intensity of the charged neutron-producing component decreased more rapidly with increasing zenith angle for zenith angles less than 60° than did that of the general charged component; for zenith angles greater than 60° the neutron-producing component decreased less rapidly than the general charged component. The intensities of both components decreased with increasing zenith angle θ less rapidly than predicted by the exp(- (h/L)(sec θ - 1)) law, where h is the atmospheric depth and L is the absorption free path (assumed to be 145 g/cm^2). The relative counting rates with the different absorbers indicated that the average cross section for neutron production (per neutron) by charged cosmic ray particles is proportional to the four-thirds power of the absorber mass number. In conclusion, we express our gratitude to V.P.Gramatin for assisting with the measurements. Orig. art. has: 1 formula and 4 figures.

SUB CODE: NP/ SUBM DATE: 00/ ORIG REF: 000/ OTH REF: 002

Card 2/2

L 2140-66 FSS-2/EWT(1)/FS(v)-3/EWA(d) TT/GW

ACCESSION NR: AP5026236 UR/0048/65/029/010/1942/1945

AUTHOR: Yefimov, Yu. Ye.; Myakinin, Ye. V.; Romanov, A. M.; Shalak, N. I.; Yur'-yev, V. V.

TITLE: Investigation of low-energy charged particles with the Cosmos 12, Cosmos 15, and Electron 2 satellites /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, 1942-1945

TOPIC TAGS: secondary cosmic ray, cosmic ray particle, fast neutron, slow neutron, atmospheric phenomenon

ABSTRACT: The authors have measured slow and fast neutron fluxes in the atmosphere at equivalent depths from about 7 to over 700 g/cm^2. The fast neutron fluxes were measured with a proportional counter surrounded by a moderator and also with a stilbene scintillation counter which recorded neutrons with energies above 2.5 Mev. To avoid recording charged particles, the stilbene counter was surrounded with plastic scintillation counters connected in anticoincidence. The slow neutron fluxes were measured with BF_3 counters, some of which had been enriched in B^{10}, and also

Card 1/3

L 2140-66

ACCESSION NR: AP5026236

with In foils. The foils were exposed in stacks of three and were shielded either above or below with Cd, so that it was possible to distinguish the portion of the induced activity due to resonance neutrons (energies between 1.35 and 1.65 ev) and separately to measure the upward and downward fluxes. At latitude 57°N and atmospheric depths from 78 to 94 g/cm^2 (the region of maximum intensity) the upward and downward fluxes of resonance neutrons were found to be the same and equal to (3.63 ± 0.83) x 10^4 neutron/cm^2 sec mev. This flux is in good agreement with the calculations of W.H.Hess, E.H.Canfield, and R.E.Lingenfelter (Geophys. Res., 66, 665, 1961) for geomagnetic latitude 44° N. Data on fast neutron fluxes are given for 9 flights in 1962, 1963, and 1964 at latitudes 47° and 57°N. The atmospheric depth for maximum intensity ranged from 80 to 105 g/cm^2, and the absorption mean free path ranged from 147 to 172 g/cm^2. Comparison of the proportional counter and scintillation counter data indicates that the atmospheric depth for maximum intensity increases with increasing neutron energy. The fast neutron flux at maximum was found to be 2 neutron/cm^2 sec; this flux is considerably greater than that found by R.R.Mendell and S.A.Korff (J. Geophys. Res., 68, 5487, 1963) and by R.F. Miles (J. Geophys. Res., 69, 1277, 1964). The maximum flux of the slow neutrons as measured with the BF_3 counters occurred at an atmospheric depth of 90 g/cm^2, and the density of slow neutrons (energies below 10 kev) at this altitude was

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L 2140-66
ACCESSION NR: AP5026236

3

found to be 3.2×10^{-7} cm^{-3}. This density agrees within a factor of 2 with the calculations of R.E.Lingenfelter (J. Geophys. Res., 68, 5633, 1963). "The authors are grateful to V.T.Barsukov, R.S.Ivanov, and D.V.Frederiks for assistance with the work." Orig. art. has: 4 figures and 1 table. [15]

ASSOCIATION: none

SUBMITTED: 00 ENCL: 00 SUB CODE: NP, ES

NO REF SOV: 001 OTHER: 006 ATD PRESS: 4123

Card 3/3

[redacted]

[redacted], V.A., inzh.; [redacted]OV, A.N., inzh.

[redacted] Mekh. i avtom. proizv. no.11:19-20 N '64 (MIRA 18:2)

ROMANOV, A.M.; STARODUBTSEV, S.V.

Surface ionization of lithium. Trudy FTI AN Uz.SSR 4:102-109 '52.
(Lithium) (Ionization) (MLRA 9:1)

P[illegible], A. N.

P[illegible]anov, A. N.: "The ionization of sodium and lithium on hot tungsten." Leningrad Physicotechnical Inst. Acad Sci USSR. Leningrad, 1956. (Dissertation for the Degree of Candidate in Physicomathematical Science)

So: Knizhnaya letopis' No 27, 1956. Moscow. Pages 94-109; 111

137-58-6-13172

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 6, p 284 (USSR)

AUTHORS: Romanov, A.M., Starodubtsev, S.V.

TITLE: On the Role of Heterogeneity of a Surface During Adsorption and Ionization of Sodium and Lithium on Tungsten (O roli neodnorodnosti poverkhnosti pri adsorbtsii i ionizatsii natriya i litiya na vol'frame)

PERIODICAL: Izv. AN UzSSR. Ser. fiz.-matem. n., 1957, Nr 3, pp 11-26

ABSTRACT: Evaluation of the influence of spottiness (heterogeneity) of a surface on the emission constants of W by means of comparison of data of electronic and ionic emission. Cathodes with three sets of spots (differing in work-function potential φ_i) and six possible types of distribution of fractions of area occupied by various kinds of spots were examined. The portion of full flow of electron emission from spots ω_i at different temperatures was calculated, and it was found that φ_{min} from spots ω increases with decrease in temperature. The apparent (average) work-function potential has a temperature coefficient at variance with zero, even when φ_i does not depend on the temperature. The ionization coefficients of Na and Li on W and

Card 1/2

On the Role of (cont.)

portions of the full current of ion emission withdrawn from spots of i-th type were calculated for selected types of spots. Also, the relative values of the energy of adsorption of atoms of Na on different planes of adsorption of facets of W. Interaction between adsorbed atoms was not taken into account. It is demonstrated that heterogeneity of surface manifests itself differently in relation to adsorption and to ionization of NaLi. Sections on which NaLi are bonded the strongest become "inactive" as to ionization. The portion of ionic current is the greatest at spots having the highest value of φ_i . Comparison data on the ionic and electronic emission leads to the conclusion that the difference in apparent work-function potential determined by these two methods, all other conditions being equal, increases as the temperature of the surface diminishes. Bibliography: 22 references.

1. Tungsten--Surface properties 2. Tungsten--Electrical properties I.D.
3. Tungsten--Adsorptive properties 4. Sodium atoms--Adsorption
5. Thermionic emission--Analysis 6. Ionic current

Card 2/2

PA - 2799

AUTHOR: ROMANOV,A.M. and STARODUBTSEV,S.V.

TITLE: Adsorption and Ionization of Sodium on Hot Wolfram. (Adsorbtsiya i ionizatsiya natriya na goryachem vol'frame, Russian)

PERIODICAL: Zhurnal Tekhn. Fiz., 1957, Vol 27, Nr 4, pp 722 - 733 (U.S.S.R.)

Received: 5 / 1957 Reviewed: 6 / 1957

ABSTRACT: In order to be able to answer the questions as to whether any peculiarities are to be observed in connection with the adsorption and ionization of sodium atoms, and, if so, of what nature they are and what reasons are responsible for such nature, tests were carried out with pure tungsten (wolfram), the influence exercised by the various factors connected with the experiments was investigated and evaluated, and, thirdly, the pressure range of the sodium vapors was extended. Experiments were carried out by means of two types of tightly soldered bulbs. The ionization of sodium was examined in accordance with the focussed beam method, and experiments concerning the adsorption and the ionization of sodium were carried out at low vapor pressures. In the latter case the "flaming" method was used. Analysis of measuring results obtained for the sodium samples showed that the fact that experimental results exceed the computed values of the ion current (in the case of homogeneous surface) cannot be explained by any impurity of the bundle by foreign basic atoms. Such circumstances are enumerated as make consideration of the inhomogeneity of the surface, just in the case of

Card 1/2

PA ~ 2799

Adsorption and Ionization of Sodium on Hot Wolfram.

sodium, of tungsten (wolfram) appear to be of particular importance. It is shown that the part played by oxygen spots on tungsten is of minor importance, and that with their aid the "anomalous" course of the curves of the ion current cannot be explained. It may be assumed that the peculiarities connected with the adsorption and ionization of sodium are due to the inhomogeneity of the surfaces used. In this connection it is of essential importance that inhomogeneity with respect to adsorption and ionization differs in that those domains in which the binding of sodium atoms is strongest are not active with respect to ionization. It may be assumed that, conditions otherwise being equal, the domains with loose structure are the first to be filled up.
(21 illustrations and 11 citations from Slav publications)

ASSOCIATION: LFTI of the Academy of Science of the U.S.S.R., Leiningrad
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Romanov, A. M.

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AUTHOR: ROMANOV, A.M.

TITLE: Ionization of Lithium on Tungsten (Ionizatsiya litiya na vol'frame, Russian)

PERIODICAL: Zhurnal Tekhn. Fiz., 1957, Vol 27, Nr 6, pp 1233 - 1239 (U.S.S.R.)

ABSTRACT: The results obtained from further experiments for the determination of the characteristics of the ionization of Li on W are shown and the author compares them with those of an ionization of Na on W. The apparatus and the order of measurements are described. The ionization potential of the valence Li electrone (V=5.40V)** is essentially greater than the mean apparent work function φ, which was determined by means of the Richardson curves for the surfaces used. This influences the minor magnitudes of the absolute Li-ion-flux magnitudes. The control experiments showed that the characteristics of the temperature curves of the Li-ion flux are not connected with the inhomogeneity of the bundle directed on the atomic thread. The curves prove the inhomogeneity of the surface itself. The ionization coefficients k for the "spotty" surfaces of different composition and at different temperatures were calculated for the evaluation of the influence of the natural inhomogeneity of the W-surface. The curve obtained this way coincided well with that obtained from the experiments. The comparison of experimental data with those

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obtained on the occasion of the ionization of Na shows that the characteristics are similar in both cases: 1) In both cases the temperature course of ionization differs noticeably from that calculated for a homogenous surface with $\varphi = \varphi^{**}$ by the fact that the ion flux is very sensitive to the presence of spots with great work function on the surface. 2) In both cases the electron flux from the W-Na and W-Li surfaces is relatively small. On the other hand also certain differences of the quantitative characteristics of the absorption and of the ionization of Li and Na were found. (With 6 illustrations and 7 Slavic references)

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21(7) PHASE I BOOK EXPLOITATION SOV/1444

Starodubtsev, S.V. and A.M. Romanov

Radioaktivnyye prevrashcheniya yader i atomnaya obolochka (Radioactive Transformations of Nuclei and the Atomic Shell) Tashkent, Izd-vo AN Uzbekskoy SSR, 1958. 498 p. 1,500 copies printed.

Sponsoring Agency: Akademiya nauk Uzbekskoy SSR. Institut yadernoy fiziki.

Ed. of Publishing House: Gaysinskaya, I.G.; Tech. Ed.: Sharikova, V.P.

PURPOSE: The book is intended for experimental physicists. It is assumed that the reader is acquainted with the principles of quantum mechanics.

COVERAGE: The author covers a wide range of theoretical and experimental problems encountered in the study of radioactive transformation. Considerable attention is devoted to the role of atomic shells in processes of radioactive transformations. Experimental methods of investigating radioactive transformations which are directly connected with the shell (electron capture, γ-ray conversion), are covered

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in detail. The author considers the influence of shells on the lifetime of radioactive atoms, on energy spectra and on angular correlation of nuclear radiation. The work done in spectrometry of recoil atoms and correlation of the direction of dispersion and polarization of particles during β-transformation is analyzed in connection with the problem of the neutrino and the problem of β-interaction. The examination of secondary effects during β-disintegration (internal bremsstrahlung, pair production, etc.) and also the theoretical and experimental research on the excitation and ionization of atoms and molecules during radioactive transformation occupy an important place in the book. Practical methods of separating isotopes and isomers, based on kinetic and electron "activation" of recoil atoms, are described. No personalities are mentioned. There are 523 references, 117 of which are Soviet.

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24(4);24(7);23(1) 06374
AUTHORS: Lobanov, Ye.M., Romanov,A.M., and Starodubtsev, S.V. SOV/166-59-5-1/9

TITLE: Multi-Angular Magnetic Broad-Band Spectrograph

PERIODICAL: Izvestiya Akademii nauk Uzbekskoy SSR, Seriya fiziko-matematicheskikh nauk, 1959, Nr 5, pp 3-11 (USSR)

ABSTRACT: The authors point out the necessity to construct a magnetic spectrograph having the advantages of the spectrograph of Buechner [Ref 18, 19] but simultaneously having the following properties: 1) resolving power of 0.1% for a relative solid angle $\sim 10^{-4}$ ster; 2) simultaneous investigation of particles in an utmost large interval of energy; 3) simultaneous measurement of the distribution of energy for 10-15 different departure angles; 4) covering of the angular domain from 0 to 170° by every 2-3°; 5) usefulness for rigid and gaseous targets. Such a spectrograph is called a multi-angular magnetic broad-band spectrograph. The authors discuss questions combined with the construction of this device. The ionic optics calculated by Leise [Ref 20] is recommended. The entrance in and the departure of the particles from the camera shall be made like

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