FRIDLAND, V. M.

3(2);30(1) P.3.4 PHASE I BOOK EXPLOITATION SOV/2059

Akademiya nauk SSSR. Pochvennyy institut im. V. V. Dokuchayeva

Pochvennaya s"yemka; rukovodstvo po polevym issledovaniyam i kartirovaniyu pochv (Soil Surveying; A Manual on Field Surveying and Mapping of Soils) Moscow, Izd-vo AN SSSR, 1959. 346 p. 7,000 copies printed. Errata slip inserted.

Resp. Eds.: I.V. Tyurin, Academician, I. P. Gerasimov, Academician, Ye. N. Ivanova, Professor, and V. A. Nosin, Candidate of Sciences; Ed. of Publishing House: V. Ya. Markov; Tech. Ed.: I. F. Kuz'min.

PURPOSE: This book is intended for students and practitioners of soil science and land utilization. It will also be of interest to geographers and cartographers engaged in soil surveying and mapping projects.

COVERAGE: This work on soil surveying was prepared by a group of scientists of the Department of Soil Geography and Cartography of the Pochvennyy institut AN SSSR (Soil Institute, AS USSR). The book discusses the methods used in both general and special-

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Soil Surveying (Cont.)

PART II

Soil Surveying (Cont.) SOV/2059

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3. Forms from the soil record book

AVAILABLE: Library of Congress

MM/dfh
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Card 7/7

SOV/10-59-5-4/25

AUTHOR: Fridland, V.M.

TITLE: On the Problem of Zonality Factors

PERIODICAL: Izvestiya Akademii nauk SSSR, Seriya geograficheskaya, 1959, Nr 5, pp 29-37

ABSTRACT: Fifty years of development of the science of natural geographical zones, created by V.V. Dokuchayev, are described in this article. According to Academician A.A. Grigor'yev, the most important problem of the principle of division of the Earth into natural geographical zones is the definition of factors and the character of their influence on the formation of these zones. The natural geographical conditions in general, and those of separate zones in particular, are the results of a lengthy historical development and of the interaction of two groups of factors, bioclimatic and geologo-geomorphological. The influence of one of these groups of factors explains the inter-

Card 1/2

On the Problem of Zonality Factors

nal heterogeneity of different geographical zones. This brought about a further division of these zones into subzones, provinces, etc. The author gives a detailed description of certain zones and of factors which caused the origination of conditions specific to these zones. He mentions the following scientists who took part in the development of the science of natural geographical zones: Ya.N. Afanas'yev, M.I. Budyko, G.N. Vysotskiy, I.P. Gerasimov, K.D. Glinka, S.A. Zakharov, N.N. Ivanov, V.L. Komarov, Ye.M. Lavrenko, L.I. Prasolov, N.N. Rozov, V.B. Sochava, G.M. Tumin, and K.A. Ufimtseva. There is 1 map, 1 table and 25 Soviet references.

ASSOCIATION: Pochvennyy institut AN SSSR (The Soil Institute of the AS USSR)

Card 2/2

FRIDLYAND, V.M.

Vertical zonality of North Vietnam soils. Pochvovedenie no.11:8-18 N '59. (MIRA 13:4)

1. Pochvennyy institut im. V.V.Dokuchayeva.
(Vietnam, North--Soils)

ANTIPOV-KARATAYEV, I.N., akademik, otv.red.; TYURIN, I.V., glavnyy red.; GORBUNOV, N.I., red.; VERIGINA, K.V., red.; ZONN, S.V., red.; IVANOVA, Ye.N., red.; KEDROV-ZIKHMAN, O.K., red.; KONONOVA, M.M., red.; LOBOVA, Ye.V., red.; MISHUSTIN, Ye.N., red.; RODE, A.A., red.; ROZANOV, A.N., red.; SOKOLOV, A.V., red.; FRIDLAND, V.M., red.; SHUVALOV, S.A., red.; YEFIMOV, A.L., red.izd-va; MAKUNI, Ye.V., tekhn.red.

[Reports of Soviet soil scientists to the 7th International Congress in the U.S.A.] Doklady sovetskikh pochvovedov k VII Mezhdunarodnomu kongressu v SShA. Moskva, Izd-vo Akad.nauk SSSR, 1960. 487 p. (MIRA 13:10)

1. International Congress of Soil Science. 7th. 2. AN Tadzhikskoy SSR (for Antipov-Karatayev). 3. Pochvennyy institut im. V.V. Dokuchayeva Akademii nauk SSSR, Moskva (for Antipov-Karatayev, Gorbunov,

(Continued on next card)

ANTIPOV-KARATAYEV, I.N.---(continued) Card 2.
Ivanova,,Kononova, Rozanov,,Fridland, Sokolov). 4. Laboratoriya lesovedeniya Akademii nauk SSSR, Moskva (for Zonn). 5. Vsesoyuznyy nauchno-issledovatel'skiy institut udobreniy i agropochvovedeniya Vsesoyuznoy ordena Lenina Akademii sel'skokhoz.nauk imeni V.I.Lenina i Institut zemledeliya akademii sel'skokhoz.nauk Belorusskoy SSR (for Kedrov-Zikhman). 6. Institut mikrobiologii Akademii nauk SSSR, Moskva (for Mishustin). 7. Nauchnyy institut po udobreniyam i insektofungitsidam im. Ya.V.Samoylova, Moskva (for Sokolov).
(Soil research)

FRIDLAND, V. M.

"On The Red-Yellow Lateritic Soils Of Permanently Moist Tropical Forest".

report submitted for the 7th Congress of International Society of Soil Science Madison, Wisconsin, 15-23 Aug 60.

FRIDLAND, V.M.

Symposium on the genesis of soils in the U.S.A. Pochvovedenie no.6: 112-116 Je '60. (MIRA 13:11)
(United States--Soil formation)

FRIDLAND, Vladimir Markovich; ZARANKIN, V.M., red.izd-va; YEGOROVA, N.F., tekhn.red.; MAKUNI, Ye.V., tekhn.red.

[Nature of North Vietnam] Priroda Severnogo V'etnama. Moskva, Izd-vo Akad.nauk SSSR, 1961. 173 p. (MIRA 14:4)
(Vietnam, North--Physical geography)

SEREBRYANNYY, L.R.; CHEBOTAREVA, N.S.; FRIDLAND, V.M.

New materials from German researchers on the paleogeography, Quaternary stratigraphy, geomorphology, and the geography of soils. Trudy Kom.chetv.per. no.26:169-173 '61. (MIRA 15:3)
(Geology)

FRIDLAND, V.M.

Soils of hilly areas of North Vietnam. Pochvovedenie no.12: 57-74 D '61. (MIRA 16:3)

1. Pochvennyy institut im. V.V.Dokuchayeva.
(Vietnam, North--Soils)

FRIDLAND, V.M.

Two ways of the formation of laterite concretions. Dokl.AN SSSR 137 no.5:1202-1205 Ap '61. (MIRA 14:4)

1. Pochvennyy institut im. V.V.Dokuchayeva AN SSSR. Predstavleno akademikom I.V.Tyurinym.
(Vietnam, North--Laterite)

LETUNOV, P.A., doktor sel'khoz. nauk, otv. red.; IVANOVA, Ye.N., doktor sel'khoz. nauk, red.; ROZOV, N.N., kand. geogr. nauk, red.; FRIDLAND, V.M., kand. geol.-miner. nauk, red.; SHASHKO, D.I., doktor geogr. nauk, red.; SHUVALOV, S.A., kand. geol.-miner. nauk, red.; GERASIMOV, I.P., akad. red. kart; MARKOV, V.Ya., red. izd-va; KASHINA, P.S., tekhn. red.; RYLINA, Yu.V., tekhn. red.

[Subdividing the territory of the U.S.S.R. into soil zones; in connection with agricultural use of the land] Pochvenno-geograficheskoe raionirovanie SSSR (v sviazi s sel'sko-khoziaistvennym ispol'zovaniem zemel'). Moskva, Izd-vo Akad. nauk SSSR, 1962. 422 p. (MIRA 15:5)

1. Akademiya nauk SSSR. Sovet po izucheniyu proizvoditel'nykh sil.

(Soils)

SOKOLOV, A.V., doktor sel'khoz. nauk, otv. red.; IVANOVA, Ye.N., red.; SHUVALOV, S.A., red.; ROZOV, N.N., red.; NOSIN, V.A., red.; FRIDLAND, V.M., red.; MARKOV, V.Ya., red. izd-va; POLENOVA, T.P., tekhn. red.

[Agrochemical characteristics of the soils of the soils of the U.S.S.R.; White Russian S.S.R., Latvian S.S.R., Lithuanian S.S.R., Estonian S.S.R., Karelian A.S.S.R., and the norhtern regions of the European part of the R.S.F.S.R.]Agrokhimicheskaia kharakteristika pochv SSSR; Belorusskaia SSR, Latviiskaia SSR, Litovskaia SSR, Estonskaia SSR, Karel'skaia ASSR i severnye raiony Evropeiskoi chasti RSFSR. Moskva, Izd-vo Akad. nauk SSSR, 1962. 279 p. (MIRA 15:12)

1. Akademiya nauk SSSR. Pochvennyy institut imeni V.V.Dokuchayeva. 2. Otdel geografii Pochvennogo instituta imeni V.V.Dokuchayeva Akademii nauk SSSR (for Ivanova, Shuvalov, Rozov, Nosin, Fridland).
(Russia, Northwestern--Soil chemistry)

FRIDLAND, V.M., DOKUCHAYEV, V.V.

Soil surveys in North Viet-Nam and their role in the progress of tropical farming."

Report submitted to the Conf. on the Application of Science and Technology for the Benefit of the Less Developed Areas.
Geneva, Switzerland 4-20 February 1963

FRIDLAND, V.M.

Laterites of North Vietnam. Kora vyvetr. no.4:126-146 '62.
(MIRA 15:9)

1. Pochvennyy institut AN SSSR.
(Vietnam, North--Laterite)

FRIDLAND, V. M.; KARAYEVA, Z. S.

Origin of acid salinized soils. Pochvovedenie no.7:77-81 Jl '62. (MIRA 15:10)

1. Pochvennyy institut imeni V. V. Dokuchayeva.

(Vietnam, North—Saline and alkali soils)

FRIDLAND, V.M.

Seminar on the soil map of Europe. Pochvovedenie no.2:106-108 F '63. (MIRA 16:3)
(Europe--Soils--Maps)

FRIDLAND, V.M.

Weathering surfaces of North Vietnam. Kora vyvetr. no.6: 241-257 '63. (MIRA 17:9)

1. Pochvennyy institut imeni V.V. Dokuchayeva, Moskva.

IVANOVA, Ye.N.; FRIDLAND, V.M.

Using the new system in the correlation and mapping of soils.
Pochvovedenie no.6:21 Je '64 (MIRA 17:7)

FRIDLAND, V.M.; DOROKHOVA, K.Ya.; ZHITKOVA, A.I.

Nature of the structure of humid tropical soils (Morth Vietnam). Dokl. AN SSSR 154 no. 3:707-709 Ja '64. (MIRA 17:5)

1. Pochvennyy institut im. V.V.Dokuchayeva i Ministerstvo sel'skogo khozyaystva SSSR. Predstavleno akademikom I.P.Gerasimovym.

SOKOLOV, A.V., otv. red.; SHKONDE, E.I., kand. sel'khoz. nauk, otv. red. Prinimal uchastiye ASKINAZI, D.L., red.; TROITSKIY, A.I., retsenzent; FRIDLAND, V.M., retsenzent

[Agrochemical characteristics of soils in the U.S.S.R.; the Transcaucasian Republics] Agrokhimicheskaia kharakteristika pochv SSSR; respubliki Zakavkaz'ia. Moskva, Nauka, 1965. 319 p. (MIRA 18:5)

1. Akademiya nauk SSSR. Pochvennyy institut im. V.V. Dokuchayeva. 2. Chlen-korrespondent AN SSSR (for Sokolov).

FRIDLAND, V.M.

Structure (formation) of soil cover. Pochvovedenie no.4:15-28 Ap '65. (MIRA 18:6)

1. Institut geografii AN SSSR.

AVERKO-ANTONOVICH, L.A.; KIRPICHNIKOV, P.A.; ZARETSKIY, Ya.S.; FRIDLAND, V.M.; PROKHOROV, V.S.; RASPOPOVA, L.V.; Prinimala uchastiye: ZUBKOVA, T.P.

Production of colored thiokol sealing materials. Kauch. i rez. 24 no.9:20-23 '65. (MIRA 18:10)

1. Kazanskiy khimiko-tekhnologicheskiy institut imeni S.M.Kirova.

ROZOV, N.N.; FRIDLAND, V.M.

Problems of soil science in the works of Academician I.P. Gerasimov; on the occasion of his 60th birthday; 1905 - . Pochvovedenie no. 12: 28-33 D '65 (MIRA 19:1)

FRIDLAND, V.Ya, Cand Tech Sci -- (diss) "Hydraulic calculation of the elements of alluviation of dikes and dams." Kiev, 1958. [illegible] with graphs [illegible] of Higher Education UkSSR. Kiev Inst of Engineers of Water Economy), 150 copies (L1,43-58, 117)

AUTHOR: Fridland, V. Ya., Engineer 98-58-7-10/21

TITLE: Calculation of Elements of One-Sided Deposition (Raschët elementov odnostoronnego namyva)

PERIODICAL: Gidrotekhnicheskoye stroitel'stvo,1958,Nr 7, pp 35-37(USSR).

ABSTRACT: The author devised formulae which permit the calculation of any given moment in the state and character of an alluvial surface and the intensity of the deposition at any given point. For the stream transporting capacity, the well known formula is used: $P = \varphi q I^n$

where P is the specific weighted hard expenditure;

q- specific pulp expenditure on the map of the deposition;

I- transversal inclination of the map of the deposition;

φ- coefficient, which depends on the granulometric ground composition and on the specific pulp expenditure;

n - the power indicator which depends mainly on the granulometric composition of the ground. This indicator can have different meanings. Gilbert, Shoklich, Meyer-Peter, N.V. Goncharov and others take $n = 1.5$; Mac-Dougall,I.I. Levi, Ye.A. Gavrashchenko (ref. 1) take $n = 2$. These meanings were based on observations of small weighted depositions

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in canals and rivers. In hydro-mechanization processes, the indicator n will have much larger limits, as the ground used for the depositions will not be homogeneous. All devised formulae result from this basic formula. There are 5 Soviet references.

1. Rivers--Sedimentation--Theory

MKHITARYAN, Artashes Melkonovich. Prinimali uchastiye: MAKSIMOV, V.S., assistent; FRIDLAND, V.Ya., assistent; MISHCHUK, G.Ya., assistent. PISARENKO, M., red.; [illegible]VICH, S., tekhn.red.

[Hydraulics and fundamentals of gas dynamics] Gidravlika i osnovy gazodinamiki. Kiev, Gos.izd-vo tekhn.lit-ry USSR, 1959. 279 p. (MIRA 12:8)

1. Kafedra gidravliki Kiyevskogo ordena Lenina politekhnicheskogo instituta (for Maksimov, Fridland).
(Hydraulics) (Aerodynamics)

10.1500

39592
S/263/62/000/011/012/022
I007/I207

AUTHOR: Mkhitaryan, A. M., Maksimov, V. S., Labinov, S. D. and Fridland, V. Ya.

TITLE: Method for studying the boundary layer by means of an electric hot-wire anemometer

PERIODICAL: Referativnyy zhurnal, otdel'nyy vypusk. 32. Izmeritel'naya tekhnika, no. 11, 1962, 36, abstract 32.11.275. In collection "Novyye metody izmereniy i pribory dlya gidravlich., issled". M., AS USSR, 1961, 90-92

TEXT: The kievskiy politekhnicheskiy institut (Kiev Polytechnic Institute) designed a test stand for studying the turbulent boundary layer in order to find optimum methods for its control. The distribution of velocity in the jet cross-section and the turbulence spectra were investigated. Average velocities and fluctuations were measured by means of the ЭТАМ-3А (ETAM-3A) electric hot-wire anommeter designed by the VEI. Width of the nozzle wire was 19 micr. The average flow velocities were found from the current intensity of the measuring bridge, and the degree of turbulence, from the readings of a C-95 (S-95) electrostatic voltmeter connected to the amplifier output. Shape and frequency of fluctuations as well as their relative amplitude were determined by means of a ЭИ-7 (EI-7) cathode-ray oscilloscope and recorded on a МПО-2 (MPO-2) oscillograph. Calibration was done by a reference Prandtl-tube. A 500 c time marker was used for determining

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the frequency [Abstracter's note: of fluctuations]; the measuring nozzle was moved by means of a screw-coordinator provided with a vernier scale. Accuracy of nozzle setting was 0.005 mm and of mean velocity measurements, 0.5%. The intensity of fluctuations was determined with an accuracy of 5 to 10%. A movable element, fastened to the flume bottom and connected to piezoelectric weighing scales designed by the Institut mekhaniki AN USSR (Institute of Mechanics, AS, UkrSSR) was used for determining the stresses on the surface. The scales had the following design features: during measurement the crystal-bearing ring driven by a special gear induces in the crystal an alternating voltage. Due to this method, distortions of measurement results, caused by leakage of the charge from the crystal, can be avoided. The accuracy of scale readings is 1%. There are 3 references and 1 figure.

[Abstracter's note: Complete translation.]

Card 2/2

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S/147/61/000/004/014/021
E195/E135

AUTHORS: Mkhitaryan, A.M., Maksimov, V.S., Fridland, V.Ya., and Labinov, S.D.

TITLE: An experimental investigation of flow in the initial sections of a semi-bounded turbulent jet

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Aviatsionnaya tekhnika, no.4, 1961, 111-119

TEXT: Most of the published experimental and theoretical work on submerged turbulent jets has been concerned with the main part of the jets, which is characterised by flow under the conditions of an enclosed boundary layer. The presence of developed turbulent inter-mixing makes it possible to assume, with an adequate degree of accuracy, a similarity of velocity diagrams expressed in dimensionless coordinates. A more complex problem is the study of the initial section of the jet, where the above assumption would result in considerable errors. The authors have carried out an experimental wind-tunnel study of the flow of semi-bounded, turbulent jet, flowing out of a right-angle

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nozzle into a prismatic trough. As a result of this investigation it has been established that, along a length of more than ten equivalent diameters (of the nozzle) and on 70% of the width of the trough, there exists a nucleus of constant velocities. In addition, the boundary layer forming on the bottom of the trough is equivalent to a boundary layer forming on a flat plate subjected to a flow of an infinite stream. Experiments carried out with the help of a hot wire anemometer showed that in the nucleus of the stream the degree of turbulence remained constant along the length and width of the trough. Finally, an empirical relationship has been obtained, giving the location of the upper limit of the nucleus of constant velocities in a semi-bounded jet:

$$y/h = e^{-x/h \cdot a} \qquad (8)$$

where: y is the flow coordinate of points of upper limit of the nucleus of constant velocities; h is the height of the nozzle; a is a coefficient depending on the amount of turbulence at the outlet from the nozzle, and equal in this case to + 0.0108.

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An experimental investigation of ... S/147/61/000/004/014/021
E195/E135

There are 8 figures.

ASSOCIATION: Kafedra gidravliki, Kiyevskiy politekhnicheskiy instit. (Department of Hydraulics, Kiev Polytechnical Institute)

SUBMITTED: January 16, 1961

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10 1200 1327 2607 2807

27243
S/170/61/004/009/002/013
B104/B125

AUTHORS: Mkhitaryan, A. M., Maksimov, V. S., Fridland, V. Ya., Labinov, S. D.

TITLE: Method of investigating the boundary layer in an operating part of a new type

PERIODICAL: Inzhenerno-fizicheskiy zhurnal, v. 4, no. 9, 1961, 12-16

TEXT: The turbulent boundary layer of a body with a pressure gradient along its axis and a gas jet flowing about it has been studied. The experiments were performed because at present there is no complete theory available, which would permit an exact calculation of the disrupture of the boundary layer. First of all, an operating part was developed, which produces a jet with a long core of constant velocity. An attempt was made to obtain a constant velocity, a constant static pressure, and a constant turbulence of flow throughout the operating part. The authors determined the velocity distribution over the cross section of the jet and also the turbulence spectrum. The mean velocities and pressure pulsations were measured by an electrothermoanemometer of the type ЭТАМ-3А (ETAM-3A). Shape, frequency,

Card 1/3

Method of investigating the ...

and amplitude of oscillations were visually determined by means of a cathode-ray oscilloscope and recorded on a film. First, the authors measured the parameters of a free, turbulent, rectangular jet. The core of constant velocity of such a jet was not longer than twice the diameter of the nozzle used. At a distance of 2-6 nozzle diameters, the authors observed an intermediate zone between the core of the jet with constant velocity and the main part of the jet. An analysis of the flow of a free jet shows that the cross section of constant velocity of the jet can only be enlarged by reducing the turbulence and energy loss in its boundary layer. For this purpose, it is recommended to bound the jet by a solid surface. With the aid of experimental data by other authors (D. N. Lyakhovskiy et al., Aerodinamika elementarnogo fakela, Soobshcheniye TsKTI, 1936) and on the basis of the Prandtl equation, the following relation is obtained for the calculation of the tangential stress of the jet: $\tau_c = 0.0125\ \rho u_o^2/2$. It is shown that the tangential stress arising with a jet flowing about a plate is one-fourth of that of a free jet. In addition, experimental results indicate that the loss in energy occurring in the boundary layer of a plate is many times smaller than in the boundary layer of a free jet. By

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Method of investigating the ...

using a prismatic jet guide that bounds the jet on three sides, it was possible to extend the jet core of constant velocity to a length of about 10 nozzle diameters. The width of the constant-velocity core amounted to 70% of the total width of the jet guide. There are 4 figures and 5 references: 3 Soviet and 2 non-Soviet.

4

ASSOCIATION: Politekhnicheskiy institut, g. Kiyev (Polytechnic Institute, Kiyev)

SUBMITTED: May 15, 1961

Card 3/3

FRIDLENDER, B.

Improve the work of the Office for the Promotion of Inventions.
Izobr. v SSSR 3 no.2:44 F '58. (MIRA 11:3)
(Riga--Electric industries)

FRIDLENDER, B. I. (Moskva)

Cruciform and T-shaped airfoils in a compressible flow.
Inzh. zhur. 2 no.4:245-261 '62. (MIRA 16:1)

(Airfoils)

L 15511-63 EWP(r)/EWT(m)/BDS AFFTC/APGC EM

ACCESSION NR: AP3006586 S/0020/63/151/006/1299/1302

AUTHOR: Fridlender, B. I.

TITLE: A cruciform wing of finite span in a compressible flow

SOURCE: AN SSSR. Doklady*, v. 151, no. 6, 1963, 1299-1302

TOPIC TAGS: cruciform wing, wing, finite span wing, compressible flow, supersonic flow, velocity potential, star shaped wing, Chaucy problem, harmonic oscillation

ABSTRACT: Compressible flow over a cruciform wing consisting of four cantilevers of arbitrary geometrical shape is considered (see Fig. 1 of the Enclosure). Each of the two side cantilevers makes arbitrary harmonic oscillations of ω frequency in a supersonic flow. The problem consists in the determination of disturbed velocity potential $\phi(x_1, y, z, t)$ in linear formation, which satisfies the equation:

$$V_\infty^2 - a^2)\frac{\partial^2\phi}{\partial x_1^2} - a^2\frac{\partial^2\phi}{\partial y^2} - a^2\frac{\partial^2\phi}{\partial z^2} + \frac{\partial^2\phi}{\partial t^2} + 2V_\infty\frac{\partial^2\phi}{\partial x_1\,\partial t} = 0.$$

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L 15511-63

ACCESSION NR: AP3006586

An expression for velocity potential is derived. The velocity potential of the star-shaped wings with identical or different dihedral angles can be determined by the same method. "The author expresses his thanks to his scientific mentor Ye. A. Krasil'shchikova." This article was presented by Academician L. I. Sedov on 12 Jan 63. Orig. art. has: 2 figures, and 8 formulas.

ASSOCIATION: none

SUBMITTED: 25Dec62 DATE ACQ: 27Sep63 ENCL: 01

SUB CODE: AI NO REF SOV: 002 OTHER: 001

Card 2/2

ACCESSION NR: AP4026950 S/0258/64/004/001/0017/0028

AUTHOR: Fridlender, B. I. (Moscow)

TITLE: Vibrations of finite-span cruciform airfoils in compressible flow

SOURCE: Inzhenerny*y zhurnal, v. 4, no. 1, 1964, 17-28

TOPIC TAGS: potential flow, perturbation velocity, supersonic flow, harmonic vibrations, leading edge problem, airfoil, finite span, cruciform airfoil

ABSTRACT: The potential flow perturbation velocity over a cruciform airfoil with four arms of arbitrary shape is considered. Each side of the cruciform airfoil is in supersonic flow with arbitrary harmonic vibrations of amplitude ω. The linear two-dimensional solution is given in terms of the perturbation potential

$$\Phi(x, y, z) = \varphi(x, y, z) \exp[i(\omega t + k_1 x)],$$

and for the φ equation

$$\frac{\partial^2 \varphi}{\partial x^2} - \frac{\partial^2 \varphi}{\partial y^2} - \frac{\partial^2 \varphi}{\partial z^2} + \lambda^2 \varphi = 0.$$

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ACCESSION NR: AP4026950

The Cauchy boundary problem is applied to the first octant and Hadamard's method is used to present the fundamental solution in the form v = U/r. The subsonic leading edge problem is shown to lead to integral equations of the form given by Ye. A. Krasil'shchikova (Kry*lo konechnogo razmakha v szhimayemom potoke. Gostekhizdat, 1952). The linearity of the problem allows one to add the effects on the velocity from the vertical and horizontal oscillations of the airfoil. "The author expresses his gratitude to his supervisor, Ye. A. Krasil'shchikova." Orig. art. has: 40 equations and 3 figures.

ASSOCIATION: none

SUBMITTED: 30Jan63 DATE ACQ: 15Apr64 ENCL: 00

SUB CODE: AI NO REF SOV: 003 OTHER: 000

Card 2/2

34021
S/056/62/042/001/045/048
B154/B112

24.6700

AUTHORS: Khulubey, Kh., Auslender, Y., Fridlender, E., Tsitseyka, Sh.

TITLE: Angular distribution of μ-mesons in π-μ decay

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 42, no. 1, 1962, 303-304

TEXT: The anisotropy of the angular anion distribution in pion decay was already investigated in Ref. 1 (A. O. Vaysenberg, E. D. Kolganova, Z. V. Minervina. ZhETF, 41, 106, 1961). The aim of the present paper is to give new data, of which only a few were published up to now, and to point out that some conclusions made in Ref. 1 are unfounded from a statistical point of view. Using the same material as for the investigation of the π-μ decay in a previous work (Ref. 3), the authors observed 1734 π-μ-e decay events and obtained the following angular distribution:

Angular interval	0 - 45°	45 - 90°	90 - 135°	135 - 180°
Number of muons	393	412	493	436

The forward-backward ratio b = -0.143 ± 0.048 indicates a deviation from

Card 1/4

Angular distribution of ...

isotropy of 2.98 of the standard errors and is therefore obtained in the case of true symmetry with a probability of less than $3 \cdot 10^{-3}$. The general deviation of the observed distribution from isotropy is measured with the probability $P(\chi^2) = 4.6 \cdot 10^{-3}$. The conditions were the same as those during the detection of pions in τ decay which was also calculated in Ref. 1. General statistics is insufficient for determining the difference between several partial distributions. Thus, in Ref. 1, the ratio π/μ is 0.958 ± 0.061 in low-density regions (all "observers") and 0.855 ± 0.052 in high-density regions ("observers" E, F, G). This distinction of material according to the forward-backward ratio obtained by different observers is statistically inadmissible. The authors therefore made the following calculation by the Monte Carlo method. From $\pi/\mu = 0.905$ (corresponding approximately to the result of all "observers" in the high-density region in Ref. 1) they chose seven π-μ pairs (seven "observers") and marked those three "observers" who had received the highest asymmetry. The volume of the samples was approximately set equal to the number of muons in the high-density region in Ref. 1. This was repeated ten times. For the ratio π/μ, the following results were obtained:

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Angular distribution of ...

All "observers"	0.907 ± 0.015
Four "observers" with the lowest asymmetry	0.582 ± 0.019
Difference	0.075 ± 0.024
Three "observers" with the highest asymmetry	0.826 ± 0.019

There are 4 references: 1 Soviet and 3 non-Soviet. The three references to English-language publications read as follows: Ref. 2. H. Hulubei, J. Auslănder, E. Friedlănder, S. Titeica. Int. Working Meeting on Cosmic Rays, Buchurest, 1959, Acad. RPR, Inst. de Fizică Atomică, Bucureşti, 1960, p. 130. J. Auslănder. Ninth Int. Ann. Conf. on High Energy Physics, Kiev, 1959, Acad. of Science USSR end IUPAP, Plenary Ses. VI-IX, Moscow, 1960, p. 239. Ref. 3. H. Hulubei, J. Auslănder, E. Balea, E. Friedlănder, S. Titeica, Proc. of the 2-nd Int. Conf. on the Peaceful Uses of Atomic Energy, Geneva, 1958, p. 1283. R. L. Garwin et al. Phys. Rev. 108, 1589, 1957.

ASSOCIATION: Institut atomnoy fiziki Rumynskoy akademii nauk Bukharest (Institute of Atomic Physics of the Rumanian Academy of Sciences, Bucharest)

Card 3/4

34021
S/056/62/042/001/045/048
B154/B112

Angular distribution of ...

SUBMITTED: October 10, 1961

Card 4/4

FRIDLENDER, I.G., kand. tekhn. nauk, dotsent; FRIDLENDER, E.I., inzh.

Solution of a class of nonlinear problems in the theory of functional interchangeability and precision of machines and their parts. Izv. vys. ucheb. zav.; mashinostr. no.9:177-183 '65. (MIRA 18:11)

FRIDLENDER, E.M.

Investigation of azimuthal effects in meson showers produced by 9 Bev protons. Zhur. eksp. i teor. fiz. 39 no.4:965-969 O '60. (MIRA 13:11)

1. Institut atomnoy fiziki Akademii nauk Rumynskoy Narodnoy Respubliki.
(Mesons) (Protons) (Cosmic rays)

FRIEDLANDER, E.M.

Distribution of transverse impulses in meson jets at accelerator energy. Comunicarile AR 13 no.9:811-815 S'63.

1. Membru corespondent al Academiei R.P.R.

FRIEDLANDER, E.M.; NITU, R.

Production of high energy neutral pions in π^--Xe collisions at 9 BeV. Comunicarile AR 13 no.9:817-820 S'63.

1. Membru corespondent al Academiei R.P.R. (for Friedlander).

FRIDLENDER, Feliks Leonidovich; TSEYTLIN, Lev Aleksandrovich; MARTYNOV, A.P., red.; GOROKHOVA, S.S., tekhn. red.

[Electronic computers] Elektronnye vychislitel'nye mashiny. Moskva, Gos. izd-vo "Vysshaia shkola," 1961. 147 p. (MIRA 15:2)
(Electronic calculating machines)

Fridlender, G. O.

FRIDLENDER, G.O., and S.A. MAIOROV.

Membrannye aeronavigatsionno-pilotazhnye pribory. Moskva, 1947. 155 p., illus

At head of title: Krasnoznamennaia ordena Lenina Voenno-vozdushnaia inzhenernaia akademiia im. N.E. Zhukovskogo.

Bibliography: p. 154.

Title tr.: Membrane air navigation and piloting instruments.

TL589.F7

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

Mathematical Reviews
Vol. 14 No. 8
Sept. 1953
Mechanics.

Fridlender, G. O. On the precession of a gyroscope under the action of an external moment. Akad. Nauk SSSR. Inženernyĭ Sbornik 12, 229–233 (1952). (Russian)

In the usual investigations of the behavior of a gyroscope under the action of an external moment, the motion of the axle is examined, and the behavior of the kinetic moment vector and of the instantaneous angular velocity vector are disregarded. The paper is concerned with the behavior of these last two vectors in the case of a rapidly rotating flywheel. *E. Leimanis* (Vancouver, B. C.).

FRIDLENDER, G.O.

PHASE I TREASURE ISLAND BIBLIOGRAPHICAL REPORT AID 325 - I

BOOK Call No.: AF608961

Author: FRIDLENDER, G. O. and SELEZNEV, V. P.
Full Title: FLIGHT MANOMETRIC INSTRUMENTS, COMPASSES AND AUTOMATIC NAVIGATORS
Transliterated Title: Pilotazhnyye manometricheskiye pribory, kompasy i avtoshturmany

Publishing Data
Originating Agency: None
Publishing House: State Publishing House of the Defense Industry (Oborongiz)
Date: 1953 No. pp.: 367 No. of copies: Not given
Editorial Staff
Editor: None Tech. Ed.: None
Editor-in-Chief: None Appraiser: None
Others: Gratitude for valuable assistance expressed to: Kozlov, A. S., Bodner, V. A., Krasovskiy, A. A., Chistyakov, N. I., and Barsukov, M. L.

Text Data
Coverage: This is a textbook. The author explains the theoretical basis of each group of instruments, and shows their principal mechanisms. He mentions frequently the trademarks of

Pilotazhnyye manometricheskiye pribory, kompasy i avtoshturmany

AID 325 - I

Russian-built instruments. Numerous diagrams, graphs, photos, tables, etc.

This is a very good, up-to-date textbook. However the instruments described are very similar to those built in the USA, and nothing new in their theory and construction has been noticed.

TABLE OF CONTENTS

TIKHMENEV, Sergey Sergeyevich; FRIDLENDER, G.O., professor, doktor tekhnicheskikh nauk, retsenzent; SELEZNEV, V.P., dotsent, kandidat tekhnicheskikh nauk, retsenzent; MATVEYEV, N.K., inzhener retsenzent; GUROV, S.Z., redaktor; LOSEVA, G.F., izdatel'skiy redaktor; ANTONYUK, P.D., tekhnicheskiy redaktor

[Elements of precision instruments; a computation and construction manual] Elementy tochnykh priborov; rukovodstvo po raschetu i konstruirovaniiu. Moskva, Gos.izd-vo obor. promyshl., 1956. 360 p. (Instruments)

PAVLOV, V.A., kandidat tekhnicheskikh nauk, dotsent; TUNIMANOV, A.Z., inzhener; ANTONOV, A.K., inzhener; GUSHCHINA, L.M., inzhener; RIVKIN, S.S., doktor tekhnicheskikh nauk; SAYDOV, P.I., kandidat tekhnicheskikh nauk dotsent; PEL'POR, D.S., doktor tekhnicheskikh nauk, professor; RYABOV, B.L., doktor tekhnicheskikh nauk, professor; TIKHMENEV, S.S., doktor tekhnicheskikh nauk, professor; FRIDLENDER, G.O., doktor tekhnicheskikh nauk, professor; CHISTYAKOV, N.I., doktor tekhnicheskikh nauk, professor.

Can V.A. Pavlov's book "Aircraft gyroscope instruments" be recommended for use as a textbook? Priborostroenie no.1:29-31 Ja '57. (MLRA 10:4)

1. Chlen pravleniya Leningradskogo otdeleniya nauchnogo inzhenerno-tekhnicheskogo obshchestva priborostroitel'noy promyshlennosti (for Tunimanov). 2. Chlen pravleniya Vsesoyuznogo nauchnogo inzhenerno-tekhnicheskogo obshchestva priborostroitel'noy promyshlennosti (for Gushchina) 3. Moskovskoye Vysshoye tekhnicheskoye uchilishche imeni Baumana (for Pel'por, Tikhmenev). 4. Moskovskiy aviatsionnyy institut imeni Serge Ordzhonikidze (for Ryabov). 5. Voyenno-vozdushnaya inzhenernaya akademiya imeni N.Ye. Zhukovskogo (for Chistykov)
(Gyroscope)

FRIDLENDER, G.O.

SLOMYANSKIY, Grigoriy Aleksandrovich; PRYADILOV, Yuriy Nikolayevich; FRIDLENDER, G.O., prof., doktor tekhn. nauk, retsenzent; YANOVSKIY, I.L., inzh., red.; PETROVA, I.A., red. izd-va; PUKHLIKOVA, N.A., tekhn. red.

[Floating gyroscopes and their use] Poplavkovye giroskopy i ikh primenenie. Moskva, Gos. izd-vo obor. promyshl., 1958. 243 p. (MIRA 11:8)
(Gyroscope)

69936
S/024/59/000/06/013/028
E031/E213

13,2000

AUTHOR: Fridlender, G. O. (Moscow)

TITLE: A System for Determining the Parameters of Motion for a Body in Space

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh nauk, Energetika i avtomatika, 1959, Nr 6, pp 108-117 (USSR)

ABSTRACT: The body is assumed to be in a weightless state in interplanetary space. The author considers a scheme which makes use of the properties of a system corrected from the second integral of the measured accelerations. The system consists of three gyroscopes which are at rest relative to the stars. If the quality of the gyroscopes is insufficiently good, the immobility of the system can be guaranteed by two optical systems directed on any two stars. With the gyrosystem are connected two platforms each of which has two degrees of freedom with respect to the gyrosystem. The two angles of inclination of the first platform with respect to the gyrosystem are assumed proportional to the repeated integral of the accelerations measured in two mutually perpendicular directions by accelerometers on the first platform. The repeated

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A System for Determining the Parameters of Motion for a Body in Space

integral of the acceleration, measured by the third accelerometer on the second platform, determines the position of the second platform. Thus the repeated integrals give the path in interplanetary space, and the simple integrals give the velocity, under the assumptions that the effect of the acceleration due to the gravitational fields of the Sun and the planets, as well as the instrumental errors of the system, can be neglected. To eliminate the errors the following set-up can be used. It is supposed that there are two optical systems directed on two planets or the Sun and a planet. The angles of inclination of the first platform must be proportional to the sum of the repeated integrals of the accelerations and of the angles of inclination of the platform with respect to the first optical system. The position of the second platform can be determined by the repeated integrals of the accelerations and angles with respect to the second optical system. An example is considered of a spherical system of coordinates whose reference plane coincides with the plane of the ecliptic and whose reference meridian

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A System for Determining the Parameters of Motion for a Body in Space

passes through the point of the vernal equinox. The radius vector r makes an angle φ with the reference plane and the azimuthal angle is denoted by α. The first platform is perpendicular to the radius vector, so that its angles of inclination with respect to the gyrosystem are φ and α. Correspondingly, the angles of inclination of the radius vector $\Delta\varphi$ and β defined by the first optical system must lie in the meridian plane and in the plane perpendicular to it through the origin. The second platform is oriented so that the axis of measurement of the third accelerometer coincides with the direction of the radius vector. The system described above has the disadvantage that four optical systems are required, but the advantage that the velocity error can be made smaller than in systems where the velocity is obtained by straight differentiation. The equations of motion of the platform are now considered. Expressions are derived for $\Delta\varphi$, β and $\Delta\phi$, the angle of inclination of the second platform with respect to the radius vector. If $\Delta\varphi$, β and $\Delta\phi$ vary not only proportionally to the repeated integrals of the

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A System for Determining the Parameters of Motion for a Body in Space

accelerations but also proportionally to the sums of the repeated and single integrals of the angles themselves, additional terms appear in the expressions. The second order differential equations of motion are derived from these extended expressions. The period of oscillation of the platform and the values of the coefficients in the equations are determined from the required accuracy of the velocity readings. The stability of compensation for the systematic errors is discussed. General conclusions of the paper are: 1) The use of a gyrosystem for motion in interplanetary space is complicated due to the "weightlessness" of the sensitive elements of the accelerometers and the consequent absence of a correction created by a period of no disturbances; 2) The method of repeated integration of the discrepancy between the calculated and the true readings avoids the above difficulty and makes possible the determination of the parameters of the motion in space; 3) The method makes it possible to obtain a period of the system

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A System for Determining the Parameters of Motion for a Body in Space

significantly less than the period of no disturbances and to introduce damping without the system being disturbed by accelerations. There are 4 figures and 2 references, 1 of which is Soviet and 1 English.

SUBMITTED: October 15, 1959

Card 5/5

FRIDLENDER, G. O.

PHASE I BOOK EXPLOITATION SOV/4364

Bodner, Vasiliy Afanas'yevich, Gavriil Oskarovich Fridlender, and Nikolay Iosifovich Chistyakov

Aviatsionnyye pribory (Aircraft Instruments) Moscow, Oborongiz, 1960. 512 p. Errata slip inserted. 10,000 copies printed.

Reviewer: B.A. Ryabov, Doctor of Technical Sciences, Professor; Ed. (Title page): V.A. Bodner, Doctor of Technical Sciences, Professor; Ed. (Inside book): O.N. Burakova; Tech. Ed.: L.A. Garnukhina; Managing Ed.: S.D. Krasil'nikov, Engineer.

PURPOSE: This is a textbook for students of aviation institutions of higher education taking a course on aircraft instruments. It may also be useful to engineering and technical workers interested in instrument production.

COVERAGE: The book presents the theory, construction principles, special features, operating principles, and design elements of instruments controlling power plants and piloting and navigating instruments. Special attention is given to the theory of errors and methods of instrument compensation. The book also discusses measuring methods and diagrams of instruments which may be used in the future. The introduction and Chs. I, III, V, VI, VIII-XIV, sec. 1 and 2 of Ch. IV,

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and sec. 1, 2, 3, 5 of Ch. VII were written by V.A. Bodner; Ch. II, sec. 4 of Ch. VII, sec. 1-4 of Ch. XV, sec. 1-6 of Ch. XVI and Ch. XVII by G.O. Fridlender; sec. 3-5 of Ch. IV by N.I. Chistyakov; sec. 5 of Ch. XV, and sec. 7 of Ch. XVI, by M.S. Kozlov; parts of sec. 5 of Ch. XI, and sec. 5 of Ch. XII, by V.V. Olizarov. No personalities are mentioned. There are 31 references, all Soviet.

TABLE OF CONTENTS:

80951

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S/024/60/000/03/013/028
E140/E463

AUTHOR: Fridlender, G.O. (Moscow)

TITLE: On the Vanishing of Limited Damping in Inertial Systems Operating in the Indicator Regime During "Fugoidal" Flight*

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh nauk, Energetika i avtomatika, 1960, Nr 3, pp 106-110 (USSR)

ABSTRACT: In inertial systems according to Leventhal consisting of a gyrovertical, corrected by moments proportional to the integral of the accelerometer output signal, damping may be realized by applying to the gyroscope an additional moment proportional directly to the accelerometer signal, ie by-passing the first integrator by a direct coupling. Analysis shows that the introduction of damping gives rise to a perturbation during changes of acceleration. Both Leventhal (Ref 1) and the present author have proposed limited damping to reduce this factor. It is demonstrated in the present article that with fugoidal flight the effectiveness of damping is sharply reduced to the point where it may be considered as absent. To restore damping, it is necessary to have additional information on

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On the Vanishing of Limited Damping in Inertial Systems Operating in the Indicator Regime During "Fugoidal" Flight

acceleration which may be subtracted from the accelerometer output. Two such sources are Doppler-effect information and aerometric information, both of which must be differentiated to obtain acceleration. The simultaneous use of limited damping and accelerometer correction by differentiated aerometric velocity measurements can make an inertial system damped and extremely stable. There are 3 figures and 2 references, 1 of which is Soviet and 1 English in Russian translation.

SUBMITTED: December 18, 1959

4

*[Annotation: "Fugoidal" should be "Phugoidal" throughout the article]

Card 2/2

FRIDLENDER, Gavriil Oskarovich; SOBOLEV, O.K., red.; AKSEL'ROD, I.Sh., tekhn. red.

[Inertial systems of navigation] Inertsial'nye sistemy navigatsii. Moskva, Gos. izd-vo fiziko-matem. lit-ry, 1961. 153 p. (MIRA 14:11)

(Inertial navigation (Aeronautics))

ER

PHASE I BOOK EXPLOITATION SOV/5933

Fridlender, Gavriil Oskarovich, and Mikhail Stepanovich Kozlov

Aviatsionnyye giroskopicheskiye pribory (Aircraft Gyroscopic Instruments) Moscow, Oborongiz, 1961. 390 p. 15,000 copies printed.

Ed. (Title page): V. A. Bodner, Doctor of Technical Sciences, Professor; Reviewers: B. A. Ryabov, Doctor of Technical Sciences, Professor, and P. V. Bromberg, Doctor of Technical Sciences, Professor; Ed. of Publishing House: I. A. Suvorova; Tech. Ed.: A. Ya. Novik; Managing Ed.: S. D. Krasil'nikov, Engineer.

PURPOSE: This book is intended for advanced students concerned with aircraft and aircraft instruments. It may also be useful to engineers in the aircraft and instrument industries.

COVERAGE: Theoretical fundamentals and design and structural features of modern aircraft and rocket gyroscopic instruments

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currently in use are given. Principles employed in the design of precision gyroscopic systems such as inertial vertical gyros, floating integrating and rate gyros, and gyroscopic instruments with integrating correction, are discussed. In the theoretical discussion of the instruments, special attention is given to dynamic properties and errors. Calculation methods, numerical examples, and descriptions are given for many instruments. No personalities are mentioned. Chs. I, III, IV, and VIII were written by G. O. Fridlender, and Chs. II, V, VI, and VII by M. S. Kozlov. There are 16 references, all Soviet.

TABLE OF CONTENTS:

GORNSHTEYN, I.A.; SHUL'MAN, I.A.; SAFARYAN, A.S.; FRIDLENDER, G.O., prof., red.; VOLKOVA, I.M., red.; BELYAYEVA, V.V., tekhr. red.

[Inertial navigation]Inertsial'naia navigatsiia. Pod red. G.O. Fridlendera. Moskva, Izd-vo "Sovetskoe radio," 1962. 248 p. (MIRA 15:12)

(Inertial navigation)

ANDREYEVA, L.Ye.; FEODOS'YEV, V.I., doktor tekhn. nauk, prof., red.; FRIDLENDER, G.O., doktor tekhn.nauk, retsenzent; AKIMOVA, A.G., red. izd-va; EL'KIND, V.D., tekhn. red.

[Elastic elements of instruments]Uprugie elementy priborov. Pod red. V.I.Feodos'eva. Moskva, Mashgiz, 1962. 254 p. (MIRA 15:9)

(Measuring instruments)

VENGEROV, V.A.; DEMIDOV, I.S.; FRIDLENDER, G.O.

Precision balancing and the determination of uneven rigidity of elastic mechanical systems. Izm. tekh. no.10:30-32 O '63. (MIRA 16:12)

DANILIN, Vasiliy Petrovich; TIKHMENEV, S.S., zasl. deyatel' nauki i tekhniki, doktor tekhn. nauk, retsenzent [deceased]; MAKSIMOV, V.V., dots., retsenzent; ARUTYUNOV, S.S., dots., retsenzent; FRIDLENDER, G.O., prof., nauchn. red.; TITOVA, V.A., red.; DANILOVA, V.V., red.

[Gyroscopic instruments] Giroskopicheskie pribory. Moskva, Vysshaia shkola, 1965. 538 p. (MIRA 18:6)

L 51435-65 EWG(j)/EWT(d)/FSS-2/EWG(r)/EWT(l)/EEC(a)/EWT(m)/FS(v)-3/
EWP(w)/EWG(v)/EWA(d)/EWP(v)/T/EWG(a)-2/EWP(k)/EWP(h)/EWG(c)/EWP(l) Pe-5/
Pf-4 SCTB TK/DD/EM
ACCESSION NR: AP5015522 UR/0286/65/000/008/0058/0058
620.178

AUTHOR: Ganin, V. P.; Opukhovskiy, L. Ye.; Fridlender, G. O.; Chachikyan, R. G.

TITLE: A unit for checking and testing automatic catapulting devices. Class 42, No. 170184

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 8, 1965, 58

TOPIC TAGS: catapult, test equipment

ABSTRACT: This Author's Certificate introduces: 1. A unit for checking and testing automatic catapulting devices. The mechanism contains a frame with a sleeve which is placed on a rigidly fastened axle turned by a motor. The device is designed for simulating catapulting loads which are close approximations of actual loads. Fastened to the frame are two guides which are joined through a system of three interconnected sleeves to a shaft which is rotated and moved along these guides by a crankshaft connecting rod mechanism. On one end of the shaft is a table for the devices being tested, and on the other end is a sprocket which is connected by a chain drive to another sprocket rigidly fastened to the base of the

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ACCESSION NR: AP5015522

unit. 2. A modification of this installation which uses a system of four levers for keeping constant tension on the chain drive when the shaft is being moved along the frame in a radial direction. Two of these levers have one end swivel-connected to the table shaft, while the other two have one end connected in the same way to the sleeves of the frame. The other ends of the levers are connected in pairs to intermediate axles with sprockets rigidly connected to them. 3. A modification of this installation which contains a balancing unit made up of a weight located on a guide frame symmetric with the table shaft and connected with the shaft sleeve through two swivel-connected levers and a rocker.

ASSOCIATION: Organizatsiya goskomiteta po aviatsionnoy tekhnike SSSR (Organization of the State Committee for Aviation Technology, SSSR)

SUBMITTED: 26Sep63 ENCL: 01 SUB CODE: IE

NO REF SOV: 000 OTHER: 000

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ACCESSION NR: AP5015522

ENCLOSURE: 01

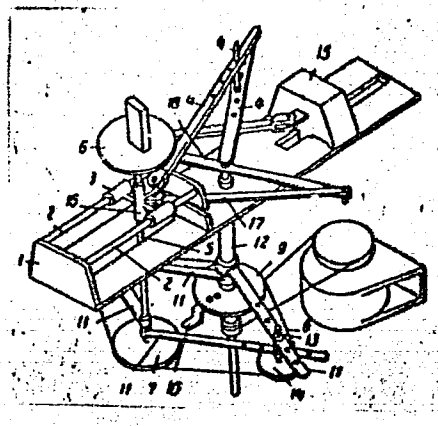

Fig. 1. 1--frame; 2--guides; 3--sleeves; 4--crankshaft connecting rod mechanism; 5--table shaft; 6--table for devices to be tested; 7--sprocket; 8--chain drive; 9--sprocket; 10--base of the unit; 11--levers; 12--sleeve of the frame; 13--intermediate axle; 14--sprockets; 15--weight; 16--shaft sleeve; 17--levers; 18--rocker

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L 11807-66 EWT(d)/FBD/FSS-2/EWT(1)/EWP(m)/FS(v)-3/EEC(k)-2/EWA(d)/EWA(c) IJP(c)
ACC NR: AP6002160 AST/GW/BC SOURCE CODE: UR/0280/65/000/006/0160/0166

AUTHOR: Fridlender, G. O. (Moscow; Deceased); Ioffe, I. G. (Moscow)

ORG: none

TITLE: A method for determining the parameters of motion and orientation of an object in the vicinity of a planet

SOURCE: AN SSSR. Izvestiya. Tekhnicheskaya kibernetika, no. 6, 1965, 160-166

TOPIC TAGS: astronautics, autonomous navigation system, attitude control

ABSTRACT: Difficulties arising in determining the flight and orientation parameters of a spacecraft flying in the vicinity of a planet of the solar system and controlled by means of autonomous navigation systems utilized in aircraft and spacecraft are indicated. An autonomous navigation system consisting of an optical indicator for determining the local vertical, the gyrosystem, three accelerometers, and a computing unit for space flights in the vicinity of a planet is proposed. General equations of motion of the controlled spacecraft in three-dimensional space, with the altitude and the angle of the orbit with the equatorial plane taken as variable, are derived. It is deduced from this that the proposed navigation system makes it possible to determine the parameters of motion of the center of mass and the orientation of a controlled spacecraft around its center of mass during maneuvers and free motion in a gravitational field. Orig. art. has: 2 figures and 12 formulas.[LK]

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ACC NR: AP6002160

SUB CODE: 22/ SUBM DATE: 15Feb65/ ORIG REF: 004/ ATD PRESS: 4180

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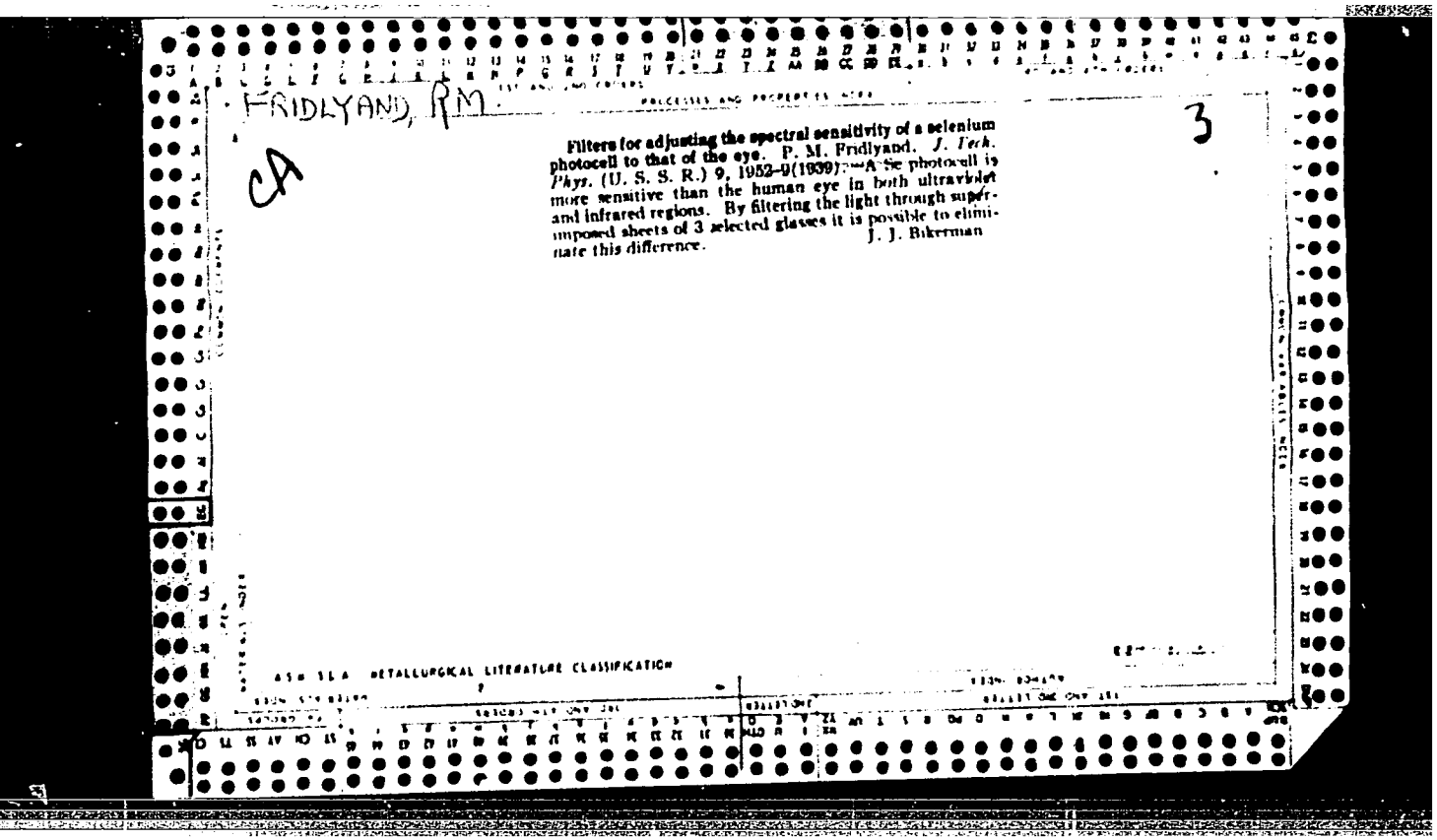
Card 2/2



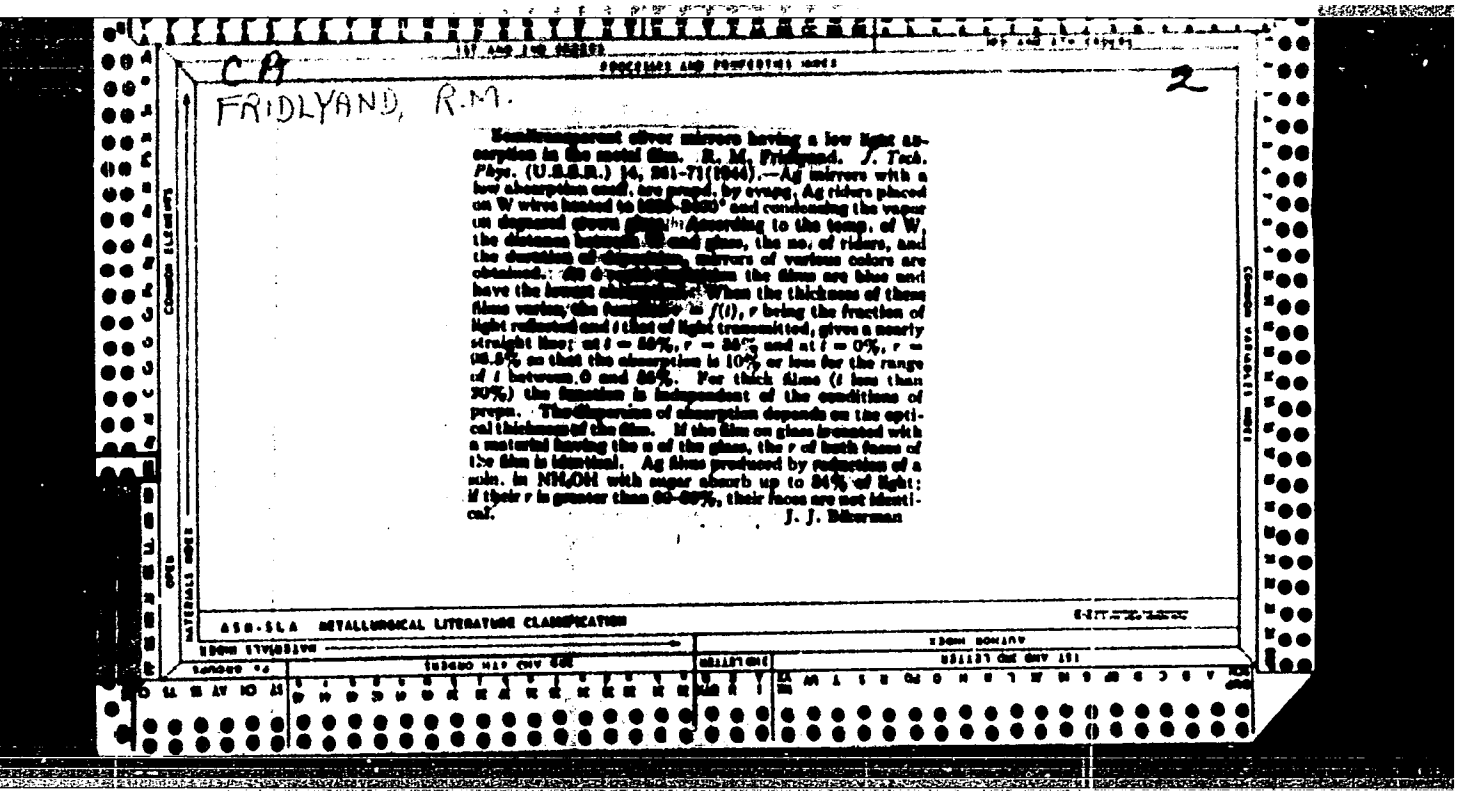
FRIDLYAND, PM

CA

3

Filters for adjusting the spectral sensitivity of a selenium photocell to that of the eye. P. M. Fridlyand. *J. Tech. Phys.* (U. S. S. R.) 9, 1952–9(1939).—A Se photocell is more sensitive than the human eye in both ultraviolet and infrared regions. By filtering the light through superimposed sheets of 3 selected glasses it is possible to eliminate this difference. J. J. Bikerman

ASM 11-A METALLURGICAL LITERATURE CLASSIFICATION



CA

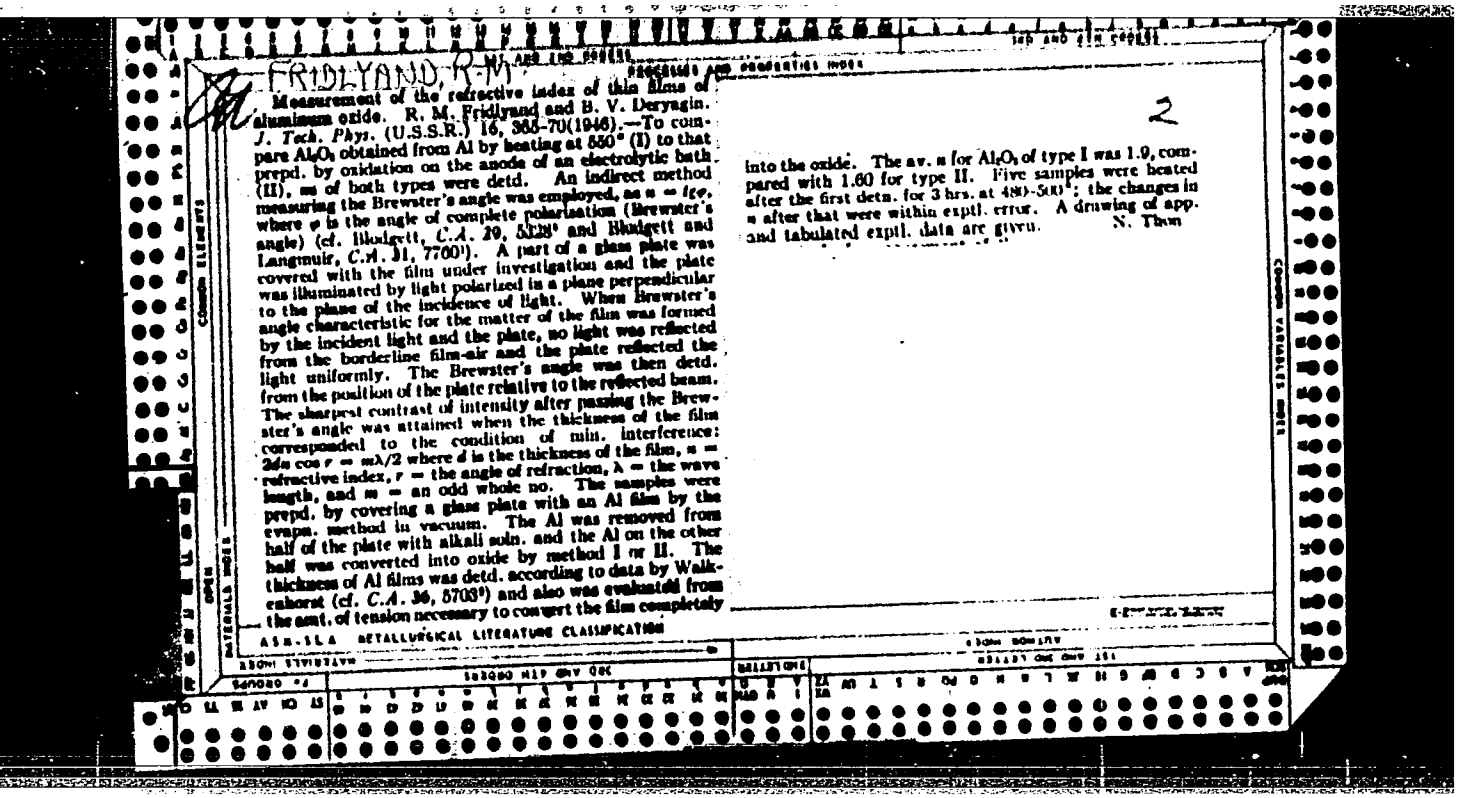
FRIDLYAND, R.M.

2

Semitransparent silver mirrors having a low light absorption in the metal film. R. M. Fridland. *J. Tech. Phys.* (U.S.S.R.) 14, 261-71(1944).—Ag mirrors with a low absorption coeff. are prepd. by evapg. Ag fibers placed on W wires heated to 2000-2600° and condensing the vapor on degreased glass plates. According to the temp. of W, the distance between W and glass, the no. of risers, and the duration of deposition, mirrors of various colors are obtained. The deposits obtained when the films are blue and have the lowest absorption. When the thickness of these films varies, the function is $f(t)$, r being the fraction of light reflected and t that of light transmitted, gives a nearly straight line; at t = 50%, r = 38% and at t = 0%, r = 96.5% so that the absorption is 10% or less for the range of t between 0 and 50%. For thick films (t less than 30%) the function is independent of the conditions of prepn. The dispersion of absorption depends on the optical thickness of the film. If the film on glass treated with a material having the n of the glass, the r of both faces of the film is identical. Ag films produced by reduction of a soln. in NH_4OH with sugar absorb up to 84% of light; if their r is greater than 60-69%, their faces are not identical.

J. J. Bikerman

ASS-SLA METALLURGICAL LITERATURE CLASSIFICATION



FRIDLYAND, R.M.

2

Measurement of the refractive index of thin films of aluminum oxide. R. M. Fridlyand and B. V. Deryagin. *J. Tech. Phys.* (U.S.S.R.) 16, 365-70(1946).—To compare Al_2O_3 obtained from Al by heating at 550° (I) to that prepd. by oxidation on the anode of an electrolytic bath (II), *n* of both types were detd. An indirect method measuring the Brewster's angle was employed, as $n = \tan\varphi$, where φ is the angle of complete polarization (Brewster's angle) (cf. Blodgett, *C.A.* 29, 5128[9] and Blodgett and Langmuir, *C.A.* 31, 7760[1]). A part of a glass plate was covered with the film under investigation and the plate was illuminated by light polarized in a plane perpendicular to the plane of the incidence of light. When Brewster's angle characteristic for the matter of the film was formed by the incident light and the plate, no light was reflected from the borderline film-air and the plate reflected the light uniformly. The Brewster's angle was then detd. from the position of the plate relative to the reflected beam. The sharpest contrast of intensity after passing the Brewster's angle was attained when the thickness of the film corresponded to the condition of min. interference: $2dn\cos r = m\lambda/2$ where *d* is the thickness of the film, *n* = refractive index, *r* = the angle of refraction, λ = the wave length, and *m* = an odd whole no. The samples were prepd. by covering a glass plate with an Al film by the evapn. method in vacuum. The Al was removed from half of the plate with alkali soln. and the Al on the other half was converted into oxide by method I or II. The thickness of Al films was detd. according to data by Walkenhorst (cf. *C.A.* 36, 5703[9]) and also was evaluated from the amt. of tension necessary to convert the film completely into the oxide. The av. *n* for Al_2O_3 of type I was 1.9, compared with 1.60 for type II. Five samples were heated after the first detn. for 3 hrs. at 480-500°; the changes in *n* after that were within exptl. error. A drawing of app. and tabulated exptl. data are given. N. Thon

FRIDLYAND, R. ...

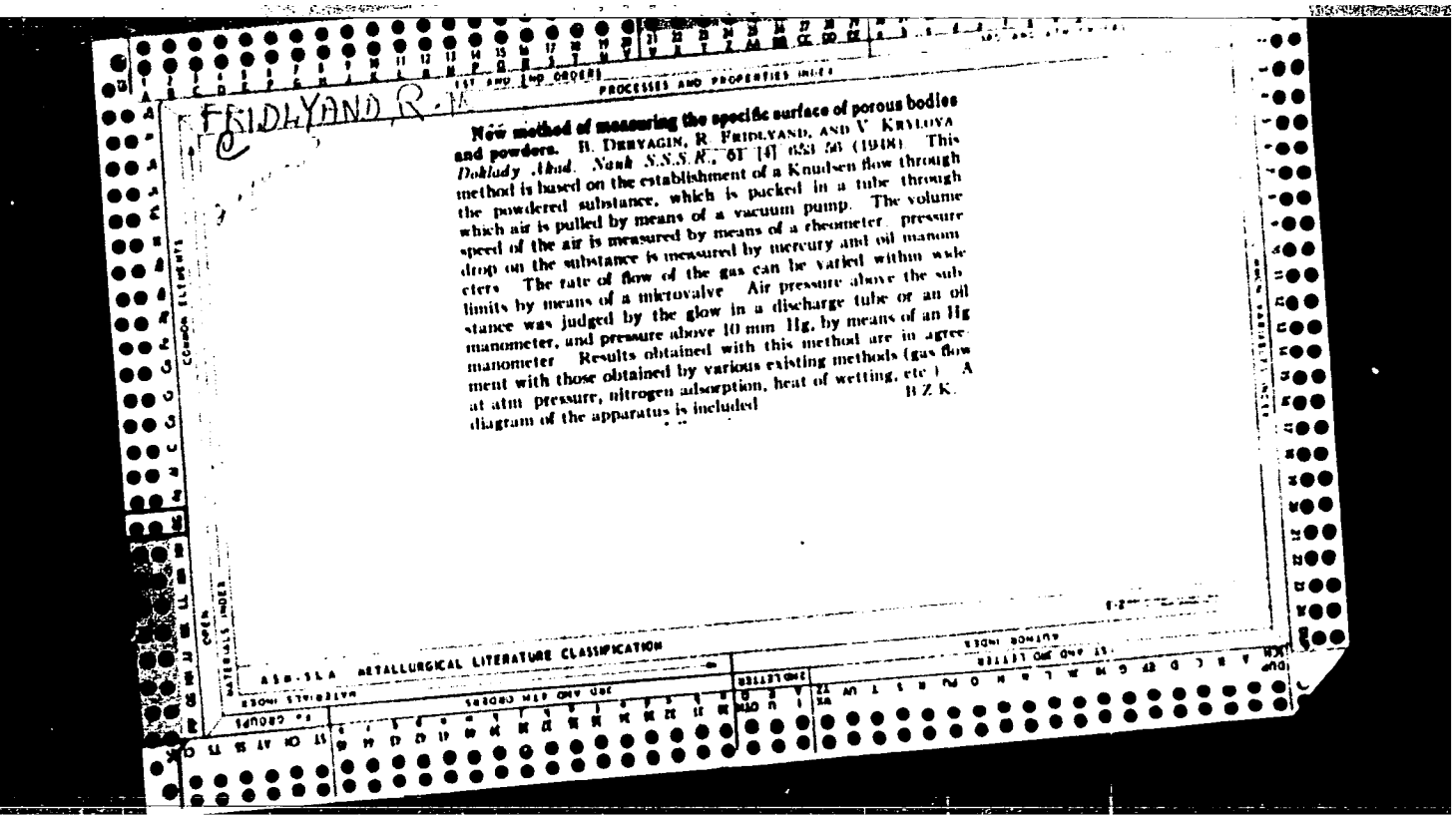
USSR/Chemistry - Aluminum Oxide Nov 48
Chemistry - Aluminum, Films of

"Thickness of the Oxidized Film Which Forms on Electrolytic Aluminum," B. V. Deryagin, R. M. Fridlyand, Inst of Phys Chem, Acad Sci USSR, 6 pp

"Zhur Tekh Fiz" Vol XVIII, No 11 - p. 1443-48

Measures by optic methods thickness of an oxide film on aluminum for various intensities of oxidation. Results of measurements showed that at any rate in the limits of 5-170 V, oxidation occurs for fixed gradient equal to 8.5×10^6 V/cm, of potential on the film. Submitted 7 Apr 48

18/49T9



FRIDLYAND R-M

New method of measuring the specific surface of porous bodies and powders. B. DERYAGIN, R. FRIDLYAND, AND V. KRYLOVA *Doklady Akad. Nauk S.S.S.R.*, 61 [4] 653-56 (1948). This method is based on the establishment of a Knudsen flow through the powdered substance, which is packed in a tube through which air is pulled by means of a vacuum pump. The volume speed of the air is measured by means of a rheometer, pressure drop on the substance is measured by mercury and oil manometers. The rate of flow of the gas can be varied within wide limits by means of a microvalve. Air pressure above the substance was judged by the glow in a discharge tube or an oil manometer, and pressure above 10 mm. Hg, by means of an Hg manometer. Results obtained with this method are in agreement with those obtained by various existing methods (gas flow at atm. pressure, nitrogen adsorption, heat of wetting, etc.). A diagram of the apparatus is included. B. Z. K.

FRIDLYAND, R.M.

NEW METHODS FOR THE MEASUREMENT OF THE SPECIFIC SURFACE (IN cm^2/g) AND OF THE SPECIFIC ADSORPTION (IN g/cm^2). I. (Novye Metody Izmereniya Udel'noi Poverkhnosti (v cm^2/g) i Udel'noi Adsorbtsii (V g/cm^2). I.) B. V. Deryagin, V. I. Kiylova, and R. M. Fridlyand. Translated by Esther Rabkin from Zhur. Fiz. Khim. 24, 1371-82(1950). 21p. (TT-272)

A simple apparatus is described for measuring exactly the specific surface of porous bodies by means of the resistance to filtration of a rarefied gas. Specific surfaces measurements made by the new method compared favorably with measurements obtained by accepted methods. Data are included from measurements of the specific surface of a mixture of powders whose specific surface differs by as much as 50 times which indicate the new method applies also to this type of poly-dispersed mixture. (C.H.)

SENA, L.A.; PANOV, I.P.; FRIDLYAND, R.M.

Study of the quenching of the pilot arc of a high-voltage mercury-arc rectifier. Izv. NIIPT no.1:29-59 '57. (MIRA 18:9)

SENA, L.A.; FRIDLYAND, R.M.

Development of inverse firing in mercury rectifiers with anodes from different metals. Izv. NIIPT no.2:22-31 '57. (MIRA 18:9)

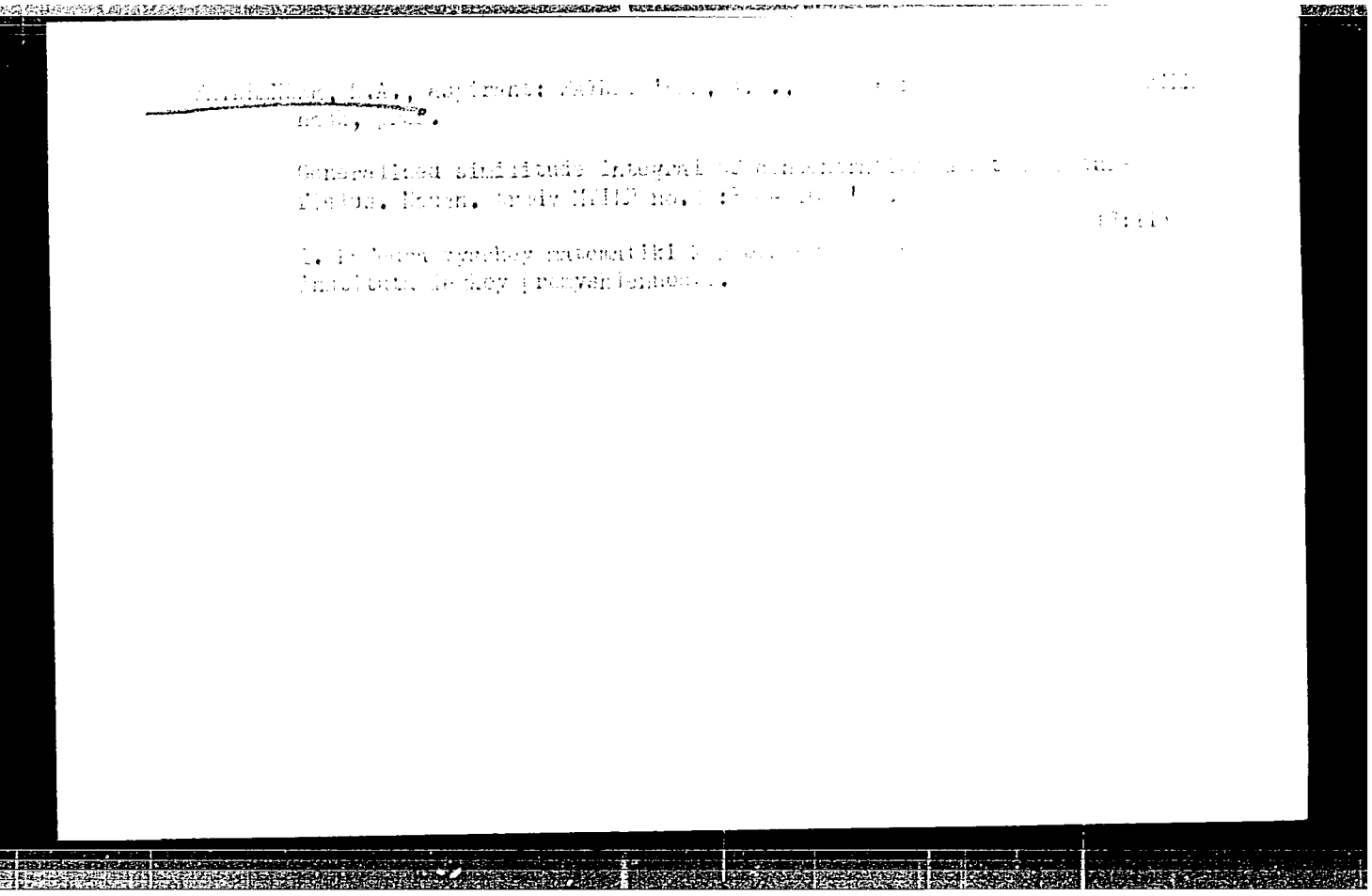
SENA, L.A.; FRIDLYAND, R.M.

Formation of the cathode spot on the mercury-dielectric boundary in ionized gas. Zhur.tekh.fiz. 29 no.1:3-11 Ja '59. (MIRA 12:4)

1. Nauchno-issledovatel'skiy institut postoyannogo toka, Leningrad.
(Cathodes) (Electric discharges through gases)

SENA, L.A.; FRIDLYAND, R.M.

Conditions leading to the origination of inverse firing due to mercury drops. Izv.NIIPT no.9:37-45 '62. (MIRA 15:12)
(Mercury-arc rectifiers)



FIDLENDER, N.A., aspirant

Theory of unstable heat conditions and its application in the calculation of the temperature fields in vulcanization presses. Mashch. trudy MTILP no.29:281-289 '64.

Temperature distribution in areas with continuously distributed heat sources. Ibid.:290-307 (MIRA 18:4)

1. Kafedra vysshey matematiki Moskovskogo tekhnologicheskogo instituta legkoy promyshlennosti.

AID P - 4210

Subject : USSR/Engineering

Card 1/1 Pub. 103 - 11/20

Author : Fridlender, I. G.

Title : Determination of Rigidity in Machine Tools

Periodical : Stan. i instr., 1, 33, Ja 1956

Abstract : The author presents a simple method for determination of rigidity (by insertion of the indicator between the tool-block and the machined piece) and provides formulae for practical calculation of rigidity in the line: body of machine, cutting tool, machined piece and machine-tool attachments. Two formulae and one sketch.

Institution : None

Submitted : No date