CHEFRANOV, S.A.; MERKULOV, P.V., inzh.

Furnace for burning carcasses of animals. Veterinariia 38 no.6:82 Je '61. (MIRA 16:6)

1. Glavnyy veterinarnyy vrach Yaltinskogo gorodskogo ispolnitel'nogo komiteta (for Chefranov). 2. Yaltinskiy gorodskoy ispolnitel'nyy komitet (for Merkulov).

(Veterinary hygiene)

MERKULOV, R. F. (Eng.); YELYUTIN, B. P. (Prof., Ph. D.); PAVLOV, Y. A.;

"Temperature Determinations at the Start of the Reaction in a Reduction of Oxides by Carbon," in book The application of Radioisotopes in Metallurgy, Symposium XXXIV; Moscow; State Publishing House for Literature on Ferrous and Nonferrous Metallurgy, 1955.

Prof. B. P. YELYUTIN, Ph. D., Prof.; Chair of Rare Metal Metallurgy, Moscow Inst. of Steel im I. V. Stalin; Y. A. PAVLOV, Ass't.; R. F. MERKULOV, Engr/Chair of Rare Metal Metallurgy.

MERKULOV, S. A.

Viticulture

Progressive work methods. Vin. SSSR 12 no. 2, 1952.

Monthly List of Russian Accessions, Library of Congress, June 1952 UNCLASSIFIED.

MERKULOV, S.S.

New working technique for brake shoe men. Zhel.dor.transp. 37 no.7:83-84 Jl '56. (MLRA 9:8)

1. Glavnyy inzhener stantsii Moskovka.
(Railroads--Brakes)

MERKULOV, T.

Committee on production quality. Mias. ind. SSSR 32 no.4: 39-40 '61. (MIRA 14:9)

1. Leningradskiy myasokombinat.
(Leningrad--Meat industry--Quality control)

MERKULOV, V.; GUSEVA, N., red.; NAGIBIN, P., tekhn. red.

[Recent developments in wages for stock raisers] Novoe v oplate truda zhivotnovodov. Alma-Ata, Kazsel'khozgiz, 1962. 26 nos. in 1 v. 25 p. (MIRA 17:1)

MERKULOV, V.A., inzh. [deceased]

Microfilming and its possible application to cartography.
Trudy MIIGAIK no.31:123-131 '59. (MIRA 13:3)
(Microphotography) (Cartography)

MERKULOV, V.A.

Investigating the dynamics of a hydraulic torque converter with a speed feedback. Trudy Inst.mash.Sem.po teor.mash.i mekh. 23 no.91:25-44 '62. (MIRA 15:9)
(Oil-hydraulic machinery)

MERKULOV, V.; CHEBOTAREV, M.

Coordinate the work of various types of transportation. Rech. transp. 22 no.4:8-10 Ap '63. (MIRA 16:4)

1. Chlen Gosplana RSFSR (for Merkulov). 2. Zamestitel' nachal'nika otdela transporta i svyazi Gosplana RSFSR (for Chebotarev).

(Transportation)

MERKULOV, V.A.; ZEMLYANIKIN, S.A.; SERGEYEV, A.L. (Yaroslavl')

New requirements for the planning of freight transportation.
Zhel.dor.transp. 45 no.2:14-20 F '63. (MIRA 16:2)

1. Chlen Gosplana RSFSR (for Merkulov). 2. Nachal'nik podotdela zheleznodorozhnogo transporta Gosplana RSFSR (for Zemlyanikin). 3. Nachal'nik gruzovoy sluzhby Severnoy dorogi (for Sergeyev).
(Railroads--Freight)

VIDULIN, A.Ye., gornyy inzhener; TORSKIY, P.N., kandidat tekhnicheskikh nauk; MERKULOV, V.A., gornyy inzhener

Dust formation and its control in mines of the "Rostovugol'" Combine. Bor'ba s sil. 2:186-193 '55. (MLRA 9:5)

1. Kombinat "Rostovugol'" (for Vidulin) 2. Novocherkasskiy politekhnicheskiy institut (for Merkulov)
(DUST--PREVENTION) (COAL MINES AND MINING)

MERKULOV, V.A

TORSKIY, P.N., kandidat tekhnicheskikh nauk; KHRIPKOV, M.S., assistent; MERKULOV, V.A., assistent; SERGEYEV, S.I., assistent.

Dust formation and its control in the process of operating the ShBM cutter-loader. Nauch. trudy MPI 32:63-70 '55. (MLRA 10:2)

(Mine dusts)
(Donets Basin--Coal mining machinery)

SOV/124-58-5-5244

Translation from: Referativnyy zhurnal, Mekhanika, 1958, Nr 5, p 42 (USSR)

AUTHORS: Frolov, M.A., Merkulov, V.A., Sergeyev, S.I., Khripkov, N.S.

TITLE On the Effectiveness of Using Auxiliary Blowers to Combat Dust in Mines During Operation of UKT Combination Coal-cutting-and-loading Machines (Issledovaniye effektivnosti primeneniya vspomogatel'nykh ventilyatorov dlya bor'by s pyl'yu pri rabote kombaynov UKT)

PERIODICAL Tr. Novocherkasskogo politekhn. in-ta, 1957, Vol 45/59, pp 91-112

ABSTRACT: Results are given of a study made of the effectiveness of using auxiliary blowers to combat dust in mines at sites where UKT combination cutting-and-loading machines are working slender seams of anthracite. Conditions were investigated at the working faces of several Donbass mines. The authors summarize their findings as follows: 1- The rate of air flow at a mine working-face when the auxiliary blower is turned off does not, as a rule, exceed 0.25-0.35 m/sec---which is not up to standard. 2- The use of auxiliary blowers makes is possible in some cases to reduce the dust content of the air in a mine shaft

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On the Effectiveness of (cont.)

by as much as 30-50%. 3- The dust content of the incoming current of supposedly fresh air prior to its arrival at the working faces (where the studies were being conducted) greatly exceeded the permissible limit from the point of view of health protection. 4- To combat dust effectively at sites where the combination cutting-and-loading machines are working slender, gently slanting seams of anthracite, the rate of air flow at the working faces must be increased to 0.7-1.0 m/sec.

Yu.A. Lashkov

1. Blowers--Effectiveness 2 Underground structures--Ventilation
3. Particles (Airborne)

Card 2/2

[illegible]OV, V.A., Cand [illegible] Sci--([illegible]) "[illegible] of [illegible]tion [illegible] pollution of th[illegible] air in [illegible] coal mines [illegible]." [illegible]
[illegible], 19[illegible]. 16 [illegible] ([illegible] USSR. [illegible]
[illegible] bor R[illegible] r [illegible] ([illegible]), 1[illegible]
([illegible], [illegible]1)

- 89 -

MERKULOV, V.A., gornyy inzhener

Use of ceramic (vitreous filters for the study of the dust content of mine air by the gravimetric method. Bor'ba s sil. 3:175-185 '59. (MIRA 12:9)
(MINE DUSTS) (FILTERS AND FILTRATION)

MERKULOV, V.A., gornyy inzh. (g.Shakhty); CHEBOTAREV, K.A., gornyy inzh. (g.Shakhty)

Dust control in the Rostovugol' Combine mines. Ugol' 35 no.5:21-23 My '60. (MIRA 13:7)

(Donets Basin--Mine dusts)

MERKULOV, V.A., kand.tekhn.nauk; KRASUNTSEV, Ye.M., inzh.;
ARAKEL'YANTS, A.K., inzh.

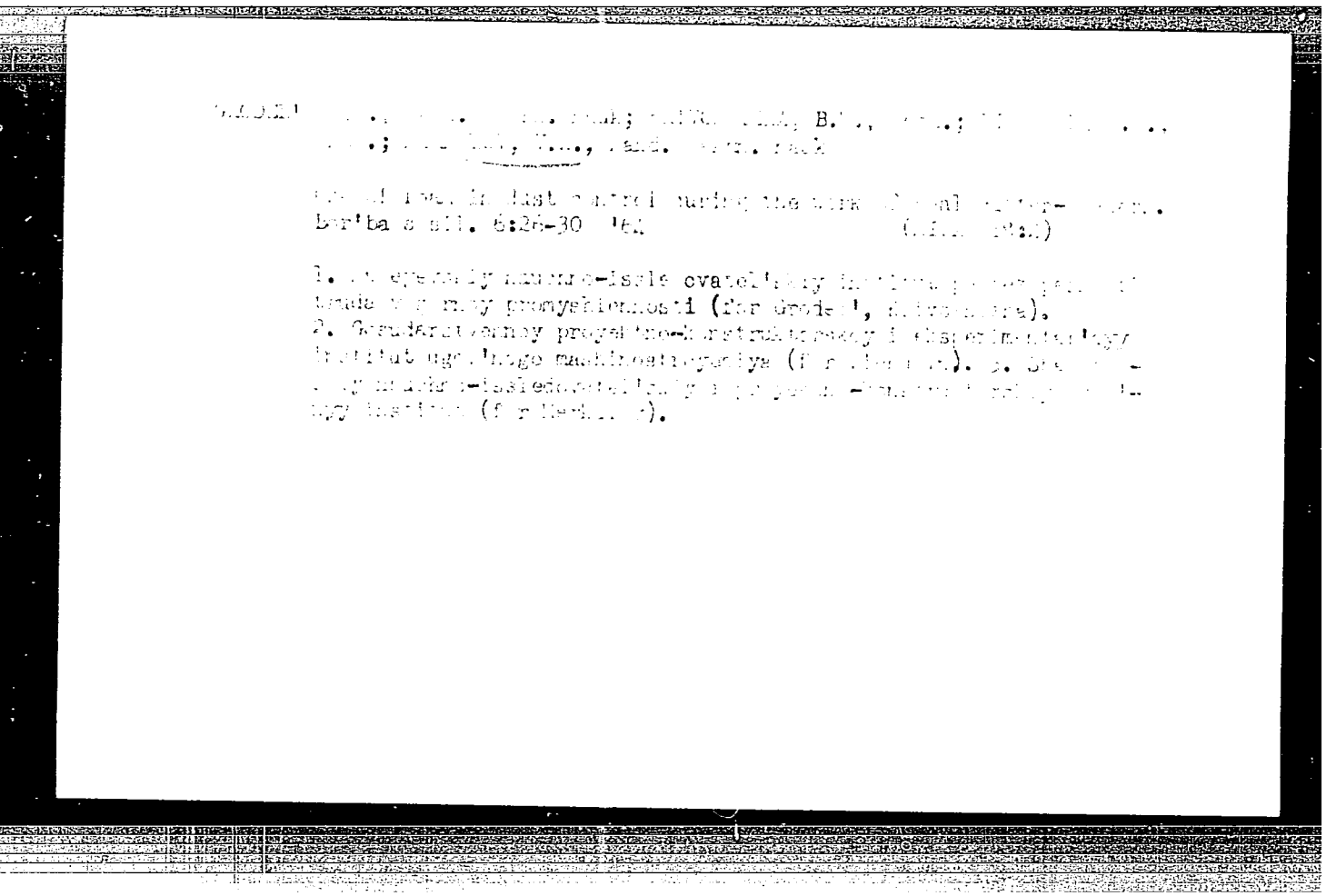
Effect of the ventilation system on the temperature conditions in the working face of blind workings. Trudy Sem.po gor. teplotekh. no.4:106-112 '62. (MIRA 15:8)

1. Shakhtinskiy nauchno-issledovatel'skiy i proyektno-konstruktorskiy ugol'nyy institut.
(Mine ventilation)

MERKULOV, V.A., kand.tekhn.nauk; ARAKEL'YANTS, A.K., inzh.; KRASUNTSEV, Ye.M., inzh.

Improving the climatic conditions in stopes of Artem Mine No.2. Trudy Sem.po gor.teplotekh. no.4:136-140 '62. (MIRA 15:8)

1. Shakhtinskiy nauchno-issledovatel'skiy i proyektno-konstruktorskiy ugol'nyy institut.
(Donets Basin--Mine ventilation)



ANDREYEV, V.P.; BUTKOVSKIY, N.I.; KOMAROV, L.A.; KUDINOV, V.S.; MASHANSKIY, G.S.; MERKIN, R.M.; MERKULOV, V.A.; ZEMLYANIKIN, S.A.; SOLOMIN, V.V.; SHOLOKHOV, Ye.I.; PEREPELITSKAYA, A.G., red.; AVDEYEVA, V.A., tekhn. red.

[Toward the new achievements; the Russian Federation in 1963, concise handbook] K novym rubezham; Rossiiskaia Federatsiia v 1963. godu. Kratkii spravochnik. Moskva, Sovetskaia Rossiia, 1963. 284 p. (MIRA 16:10)
(Russia--Economic policy--Handbooks, manuals, etc.)

TARASEVICH, N.I.; IOFFE, M.M.; POPOV, S.M.; VEKLICH, M.I.; DRAUSAL', A.V.; DIKOVSKIY, A.M.; MERKULOV, V.G., ARNO, B.E.

Saving electric power and increasing the output of electric bell furnaces; suggested by N.I. Tarasevich and others. Prom. energ. 13 no.8:20-21 Ag '58. (MIRA 11:10)
(Electric furnaces)

MERKUR'YEV, Veniamin Ivanovich. MOSHKIN, A.S., red.; BARANOV, I.A., tekhn. red.

[Boss and friend of the engine] Khozlain i drug mashiny. Murmansk, Murmanskoe knizhnoe izd-vo, 1960. 18 p. (MIRA 16:5)

(Locomotive engineers)

1. MERKULOV, V. I.

2. USSR (600)

4. Motion

7. Certain problem of Zhukovskiy. Prikl. mat. i mekh. 16, no. 5, 1952.

9. Monthly List of Russian Accessions, Library of Congress, Febru r: 1953, Uncl.

(

SOV/21-59-9-13/25

AUTHOR: Merkulov, V.I.

TITLE: Heat Exchange Between a Liquid and a Heat-Evolving Rod

PERIODICAL: Dopovidi Akademiyi nauk Ukrayins'koyi RSR, Nr 9, 1959, pp 985-990 (USSR)

ABSTRACT: In this article, the author develops a sequence of formulae enabling the solution of the problem of stationary heat exchange between the plane stream of an ideal liquid and the heat-evolving cylinder. Unknown coefficients are determined from the equality of temperatures and heat flows on the rod boundary. The temperature of the liquid and the rod can be established by substituting the determined coefficients into the series

$$T_1 = exp\left[\frac{1}{\alpha} U_0 ch\xi \cos\eta\right] \sum_{n=0}^{\infty} \alpha_n ce_n(\eta,\lambda_n) Fek_n(\xi,\lambda_n)$$

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Heat Exchange Between a Liquid and a Heat-Evolving Rod

$$T = -\frac{1}{4} q r^2 + \sum_{n=0}^{\infty} b_n r^n \cos n\theta$$

whereby T stands for temperature; q - thermal sources of density; r_o - radius; U - component of the motion rate of the liquid; a_n, b_n - unknown coefficients. The temperature of the cylinder is determined according to the formula

$$T = \frac{1}{4} q\left(r_0^2 - r^2\right) - \frac{1}{2} q r_0^2 \frac{65,0498 \frac{k_1}{k} - 0,6318\left(\frac{k_1}{k}\right)^2}{227,295 \frac{k_1}{k} - 1156,40} -$$

$$-\frac{1}{2} q r r_0 \frac{60,8067 \frac{k_1}{k} + 0,5551\left(\frac{k_1}{k}\right)^2}{227,295 \frac{k_1}{k} - 1156,40} \cos\theta -$$

$$-\frac{1}{2} q r^2 \frac{53600 \frac{k_1}{k} + 0,4186\left(\frac{k_1}{k}\right)^2}{227,295 \frac{k_1}{k} - 1156,40} \cos 2\theta + \ldots)$$

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Heat Exchange Between a Liquid and a Heat-Evolving Rod

from which it is easy to determine the dependence of the temperature on each spot of the cylinder on the ratio $\frac{k_1}{k}$, on the radius r_o and on the density of the sources q. There are 4 Soviet references.

ASSOCIATION: Kyyivs'kyy derzhavnyy universytet im. T.H. Shevchenka (Kiyev State University im. T.H. Shevchenko)

MERKULOV, V.I. (Kiyev)

Heat exchange in a plane steady flow of a viscous liquid.
Prikl. mat. i mekh. 23 no.3:581-582 My-Je '59.
(MIRA 12:5)
(Fluid dynamics) (Heat--Transmission)

MERKULOV, V. I., Cand Phys-Math Sci -- (diss) "Some theoretical problems of heat exchange in a liquid stream." Kiev, 1960. 5 pp; (Ministry of Higher Education Ukrainian SSR, Kievskiy Order of Lenin State Univ im T. G. Shevchenko); 150 copies; price not given; (KL, 17-60, 139)

MERKULOV, V. I. (Kiyev)

"The stability of a Flexible Conductor in its own Magnetic Field."

report presented at the First All-Union Congress on Theoretical and Applied Mechanics, Moscow, 27 Jan - 3 Feb 1960.

MERKULOV, V. I. and BUBLIK, B. N. (Kiev)

"Stability of Elastic Shells Filled with Liquid."

report presented at the First All-Union Congress on Theoretical and Applied Mechanics, Moscow, 27 Jan - 3 Feb 1960.

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AUTHORS: Bublik, B.N., and Merkulov, V.I. (Kiyev)

TITLE: On the Dynamic Stability of Thin Elastic Shells Filled up With a Fluid

PERIODICAL: Prikladnaya matematika i mekhanika, 1960, Vol.24, No.5, pp.941-946

TEXT: The authors consider a thin elastic shell the inner cavity of which is entirely or partially filled with an ideal incompressible fluid. The question for the dynamic stability leads to the solution of the variation problem

$$(1.1) \qquad \delta \int_{t_o}^{t} (T''-A''-U'')dt = 0,$$

where T" and U" are the kinetic and the potential energy of the disturbed system, while A" is the work of a certain reduced load on the shifts of the disturbance and is defined as in (Ref.2). If the inertia terms can be neglected or if the initial state of the shell is almost free of moments it holds

$$(1.5) \qquad A'' = \frac{1}{2} \iint_{\Sigma} \left[F_\alpha u + F_\beta v + F_n w\right] d\sigma ,$$

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On the Dynamic Stability of Thin Elastic Shells Filled up With a Fluid

where

$$F_\beta = \frac{1}{PQ}\left[\frac{\partial}{\partial\beta}(\varepsilon_1 PT_2^0) - T_1^0\frac{\partial}{\partial\beta}(\varepsilon P) + \frac{\partial}{\partial\alpha}(\varepsilon_2 PS^0) + S^0\frac{\partial}{\partial\alpha}(\varepsilon_2 Q) - q_\beta(\varepsilon_1+\varepsilon_2)\right]$$

(1.4) $$F_n = T_1^0 \varkappa_1 + T_2^0 \varkappa_2$$

$$F = \frac{1}{PQ}\left[\frac{\partial}{\partial\alpha}(\varepsilon_2 QT_1^0) - T_2^0\frac{\partial}{\partial\alpha}(\varepsilon_2 Q) + \frac{\partial}{\partial\beta}(\varepsilon_1 QS^0) + S^0\frac{\partial}{\partial\beta}(\varepsilon_1 P) - q_\alpha(\varepsilon_1+\varepsilon_2)\right.$$

Here and lateron Σ is the middle surface; α,β are its curvilinear coordinates; n is its normal; P, Q are the coefficients of its first fundamental form; u,v,w are sh[illegible]s corresponding to α,β,n; m_0 and ρ are mass densities of the surface of the shell and the volume of the fluid; ε_1, ε_2, ω, $\varkappa_1$, $\varkappa_2$, τ are relative deformations of the shell expressed by u,v,w according to the linear theory of shells; T_1^0, T_2^0, S^0 are stresses of the undisturbed shell by which the initial state free of moments is characterized; q_α, q_β, q_n are the outer loads; a is the acceleration of the

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On the Dynamic Stability of Thin Elastic Shells Filled up With a Fluid

translation of motion of the system; V is the volume of the fluid. φ is the velocity potential of the fluid in V; Σ_1 is the part of the boundary of V where $\frac{\partial \varphi}{\partial h}$ is known; Σ_2 is the part of the boundary of V where φ is known; G is the Green's function of the Neumann-Dirichlet problem for the Laplace equation in V.

It holds

$$(1.6) \qquad \varphi = \iint_{\Sigma_1} G \frac{\partial \varphi}{\partial n} d\sigma - \iint_{\Sigma_2} \frac{\partial G}{\partial n} \varphi d\sigma .$$

The solution of (1.1) leads to four differential equations

$$(1.7) \quad L_{11}(u)+L_{12}(v)+L_{13}(w)+ \frac{1-\nu^2}{Eh}\left[F_\alpha - m_o \frac{\partial^2 u}{\partial t^2}\right] = 0$$

$$L_{21}(u)+L_{22}(v)+L_{23}(w)+ \frac{1-\nu^2}{Eh}\left[F_\beta - m_o \frac{\partial^2 v}{\partial t^2}\right] = 0$$

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On the Dynamic Stability of Thin Elastic Shells Filled up With a Fluid

$$L_{31}(u)+L_{32}(v)+L_{33}(w)+\frac{1-\nu^2}{Eh}\left[F_n-m_0\frac{\partial^2 w}{\partial t}-\rho\frac{\partial\varphi}{\partial t}\right]=0$$

$$\Delta\varphi=0.$$

The boundary conditions correspond to the clamping of the boundary of the shell
[Abstracter's note: not given]
and φ:

(1.8) $$\frac{\partial^2\varphi}{\partial t^2}+a\frac{\partial\varphi}{\partial z}=0 \text{ on the free surface } z=0$$

(1.9) $$\frac{\partial\varphi}{\partial n}=\frac{\partial w}{\partial t} \text{ on the wetted inner surface.}$$

The operators L,M,E,N and the vector $X(u,v,w,\varphi)$ can be introduced so that (1.7) assumes the form

(2.1) $$LX+MX+E\frac{\partial^2 X}{\partial t^2}+N\frac{\partial X}{\partial t}=0.$$

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On the Dynamic Stability of Thin Elastic Shells Filled up With a Fluid

Here L,M,E,N satisfy all conditions for the existence and uniqueness of a generalized solution according to the theorem 3 of Vishik (Ref.6). As an application of the described theory the authors consider a circular cylindrical shell filled with a fluid, with a flexibly clamped boundary. The investigation leads to a system of Hill's equations the investigation of which yields the eigenfrequencies and kinetic forces for the system shell + fluid. If especially the shell is filled completely with a fluid then the question for the stability for arbitrary shell parameter and loads can be answered with the aid of the stability diagram for the appearing Hill's equations.

The authors thank N.N.Moiseyev for the theme and advices. There are 6 Soviet references.

[Abstracter's note: (Ref.2) concerns V.V.Bolotin, Dynamic Stability of Elastic Systems, 1956. (Ref.6) concerns a paper of M.I.Vishik in Doklady Akademii nauk SSSR, Vol.100, No.3]

SUBMITTED: November 25, 1959

Card 5/5

MERKULOV, V.I.; MEN', A.A.

Errors in registering the explosion moment. Izv. vys. ucheb. zav.; geofiz. no.5:30-32 '65. (MIRA 18:9)

MERKULOV, V. I. (Kiev)

Solution of the equations of flow of viscose fluid by high Reynolds numbers. Rev math Roum 10 no.1:19-30 '65.

1. Submitted April 30, 1964.

L 55109-65 EWT(l)/EPF(c)/EPF(n)-2/EWG(m)/EPR Pr-4/Ps-4/Pu-4 WW/DM

ACCESSION NR: AP5014545 UR/0089/65/018/005/0525/0527

AUTHOR: Subbotin, V. I.; Ibragimov, M. Kh.; Merkulov, V. I.; Nomofilov, Ye. V.; Tychinskiy, N. A.

TITLE: Pulsations of tube wall temperature under conditions of intense convective heat exchange

SOURCE: Atomnaya energiya, v. 18, no. 5, 1965, 525-527

TOPIC TAGS: heat exchange, Reynolds number, heat convection, temperature pulsation

ABSTRACT: The authors first summarize previously observed pulsations of temperature in a heat-transfer wall under steady state heat-exchange conditions (Teplofizika vysokikh temperatur v. 1, 238, 1963; Atomnaya energiya v. 8, 254, 1960; Teploenergetika No. 3, 64, 1962; and others). They then describe the results of measurements of temperature pulsations in an exchanger consisting of an internal tube (24 mm in diameter, 2 mm wall thickness) and and external tube (41 mm diameter, 3 mm wall), with a heat-exchange section 900 mm long. Coolants of different temperatures were fed through the heat exchanger under conditions which were close to either constant flow or constant wall temperature. The heat flux varied from 1.3 x

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ACCESSION NR: AP5014545

x 10^5 to 6 x 10^5 W/m^2, and the experiments were carried out in the Reynolds number range 65 x 10^3--180 x 10^3. An analysis of the temperature pulsations recorded with an automatic potentiometer has shown the following: 1. The temperature pulsation in the wall constitutes a steady state random process with a broad frequency spectrum (0.01--5 cps). 2. At constant heat flux the average temperature pulsation frequency increases with increasing velocity in the investigated range of Reynolds numbers. 3. The temperature pulsations on the wall are practically independent of the boundary conditions on the heat-transfer wall. The temperature pulsations obtained at constant heat flow and at constant temperature of the wall are practically the same. 4. The intensity of the temperature pulsations in the wall is proportional to the heat flow. 5. The heat-exchange surface exerts a great influence on the character of the pulsations. It is stated in conclusion that the results are still preliminary. "The authors thank A. I. Leypunskiy for a discussion of the results and useful advice." Orig. art. has: 2 figures. [02]

ASSOCIATION: None

SUBMITTED: 20Aug64 ENCL: 00 SUB CODE: TD, ME

NO REF SOV: 006 OTHER: 000 ATD PRESS: 4024

Card 2/2

L 02438-67 EWP(k)/EWP(h)/EWT(d)/EWT(m)/EWP(l)/EWP(w)/EWP(v) IJP(c) EM/WW

ACC NR: AP6026744 SOURCE CODE: UR/0198/66/002/005/0090/0094

AUTHOR: Merkulov, V. I. (Kiev); Selezov, I. T. (Kiev)

40
B

ORG: Institute of Cybernetics, AN UkrSSR (Institut kibernetiki AN UkrSSR)

TITLE: Increasing the dynamic rigidity of an elastic structural element by means of automatic control 14

SOURCE: Prikladnaya mekhanika, v. 2, no. 5, 1966, 90-94

TOPIC TAGS: structure dynamic stability, dynamic stress, THIN SHELL STRUCTURE 24

ABSTRACT: While the rigidity of elastic structural elements increased by increasing the number of cross sections, the useful weight of the element is substantially decreased. A model consisting of a hinged beam in parametric resonance with a velocity transducer placed at the middle of the beam was analyzed. The purpose of the study was to find new means of increasing the rigidity of thin-walled constructions without any notable increase in their weight. By placing tie-rods connected with elastic membranes inside the system, forces can be produced on the tie-rods which, in turn, generate controlling moments on the membranes. Mathematical analysis showed that such a method may offer a possibility for improving the dynamic rigidity of a flying apparatus where the external aerodynamic forces would be generated by the deflection of automatically-controlled carrying surfaces. The restriction parameters for damping and

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ACC NR: AP6026744

attenuation of the vibrations are developed. Orig. art. has: 17 formulas, 2 figures.

SUB CODE: 20,01/ SUBM DATE: 29Apr65/ ORIG REF: 003

Card 2/2

ACC NR: AP7002171 SOURCE CODE: UR/0089/66/021/006/0513/0514

AUTHOR: Ibragimov, M. Kh.; Merkulov, V. I.; Subbotin, V. I.

ORG: none

TITLE: Random thermal elastic stresses produced in a wall by temperature pulsations

SOURCE: Atomnaya energiya, v. 21, no. 6, 1966, 513-514

TOPIC TAGS: elastic stress, thermal stress, heat transfer, nuclear reactor technology

ABSTRACT: In view of the importance of temperature pulsations on the heat-transfer walls of heat exchangers, the authors present an approximate method of calculating the intensity of random thermal elastic stresses produced by random pulsations of the temperature on the boundaries of a solid. The problem is solved in the thin-plate approximation, using a quasistatic analysis, in view of the low frequency spectrum (0.05 - 5 cps) of the pulsations actually occurring in the case of turbulent heat exchange. The problem is solved for an infinite plate with clamped and free edges. In both cases, the intensity of the thermal stresses increases linearly with the intensity of the temperature pulsations. A plot showing the dependence of the intensity of the temperature pulsations on the Reynolds number in the case of heat exchange between liquid metal and water is also presented and it is shown that in actual nuclear reactors or heat exchangers allowance for the additional stresses may be important. Orig. art. has: 2 figures and 7 formulas.

SUB CODE: 18/ SUBM DATE: 20Jun66/ ORIG REF: 005/ OTH REF: 001

Card 1/1 UDC: 621.039.517.5

30-58-4-15/44

AUTHOR: Merkulov, V. L., Candidate of Biological Sciences.

TITLE: Synopsis of a Lecture on Lenin (Konspekt odnoy rechi o Lenine) From the Archives of A. A. Ukhtomskiy, Academician (Iz arkhiva akademika A. A. Ukhtomskogo)

PERIODICAL: Vestnik Akademii Nauk SSSR, 1958, Nr 4, p. 81 - 83 (USSR)

ABSTRACT: Among the material concerned with the life and work of Vladimir Il'ich Lenin his diploma of the state examination at the Petersburg University of the year 1891 is preserved. In 1941 during the siege of Leningrad the 50th anniversary was celebrated. Two meetings of the Scientific Council of the University were held in which several hundreds of persons took part. Some lectures were held, among other also by A. A. Ukhtomskiy who then was 67 years of age and was very ill. The text of his lecture on Lenin at the meeting of December 2, 1941 was lost. The author of this paper, however, recently found 3 identical drafts of this lecture when he was looking through the material of A. A. Ukhtomskiy in the archives of

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Synopsis of a Lecture on Lenin
From the Archives of A. A. Ukhtomskiy, **Academician**

the AS USSR. The short content of the draft reads as follows:

1) We are always deeply impressed when out of an everyday familiar situation something great is formed.
2) The Leningrad University can show a number of great men who had been studying there.
3) Vl I. Lenin. A man of extraordinary spiritual power and will who eyed his aim and never would let it go.
4) A man the leader of the world for many men at home and abroad.
5) His name-turning point in history. It may be that a Russian name became so great and so internationally known to such a degree for the first time.
6) Representative of the original Russian people in the Volga area. Ul'yanovy: Nizhniy Novgorod, later Simbirsk.
7) The Leningrad University remembers him as a student, as a great man from the Volga area who spread the Russian name

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Synopsis of a Lecture on Lenin
From the Archives of A. A. Ukhtomskiy, Academician

far and full of glory among the peoples of the world, as a man who was lucky enough to be the leader of a time when history began to form a new age, as a man who succeeded in developing modesty and deep humanity in the most critical moments.

1. USSR—History

I. Lenin, V. I. II. Ukhtomskiy, A. A.

Card 3/3

MEREULOV, V.L.

Materials on J.P. Pavlov's friendship with R. Tigerstedt. Fiziol.zhur. 45 no.9:1162-1165 S '59. (MIRA 13:1)
(PAVLOV, IVAN PETROVICH, 1849-1936)
(TIGERSTEDT, ROBERT, 1853-1923)

MERKULOV, V.L. (Leningrad)

Principle of dominance and A.A. Ukhtomskii's concept of the chronotope, (time-space complex). Usp. sovr. biol. 47 no.2:204-219 Mr-Ap '59.
(NEUROPHYSIOLOGY, (MIRA 12:7)
Ukhtomskii's dominance & chronotonus, review (Rus))

MERKULOV, Vasiliy Lavrent'yevich; ASRATYAN, E.A., otv.red.; TARASOV, G.A., red.izd-va; ZAMARAYEVA, R.A., tekhn.red.

[Aleksei Alekseevich Ukhtomskii; a study of his life and scientific activities, 1875-1942] Aleksei Alekseevich Ukhtomskii; ocherk zhizni i nauchnoi deiatel'nosti, 1875-1942. Moskva, Izd-vo Akad.nauk SSSR, 1960. 313 p. (MIRA 13:12)

1. Chlen-korrespondent AN SSSR (for Asratyan).
(Ukhtomskii, Aleksei Alekseevich, 1875-1942)

VARTANYAM, G.A.; MERKULOV, V.L.; MENITSKIY, D.N.

Professor Norbert Wiener's (U.S.A.) report at the Institute of Experimental Medicine of the Academy of Medical Sciences of the U.S.S.R., July 22, 1960. Fiziol. zhur. 46 no.12:1518-1519 D '60. (MIRA 14:1)

(ELECTROENCEPHALOGRAPHY)

MERKULOV, V.L.

Scientific ties of I.P. Pavlov and W.B. Cannon. Fiziol. zhur. 46 no. 4:501-505 Ap '60. (MIRA 13:10)

1. Muzey I.P. Pavlova Instituta eksperimental'noy meditsiny AMN SSSR, Leningrad.
(PAVLOV, IVAN PETROVICH, 1849-1936)
(CANNON, WALTER BRADFORD, 1871-1945)

MERKULOV, V.L.

Influence of research done by Russian physiologists on the scientific work of Svante Arrhenius. Trudy Inst. ist. est. i tekh. 36:217-243 '61. (MIRA 14:9)
(Arrhenius, Svante August, 1859-1927)
(Pavlov, Ivan Petrovich, 1849-1936)
(London, Efim Semenovich, 1869-1939)

MERKULOV, V.L.

Data on I.P.Pavlov's attitude toward the use of mathematical methods for the study of problems of nutrition and of the higher nervous activity. Zhur. nevr. i psikh. 61 no.4:600-605 '61. (MIRA 14:7)

1. Muzey imeni I.P.Pavlova, Institut eksperimental'noy meditsiny, Leningrad.
(PAVLOV, IVAN PETROVICH, 1849-1936) (BIOMATHEMATICS)

DANILOV, Ivan Vasil'yevich; MERKULOV, V.L., red.; ONOSHKO, N.G., tekhn. red.

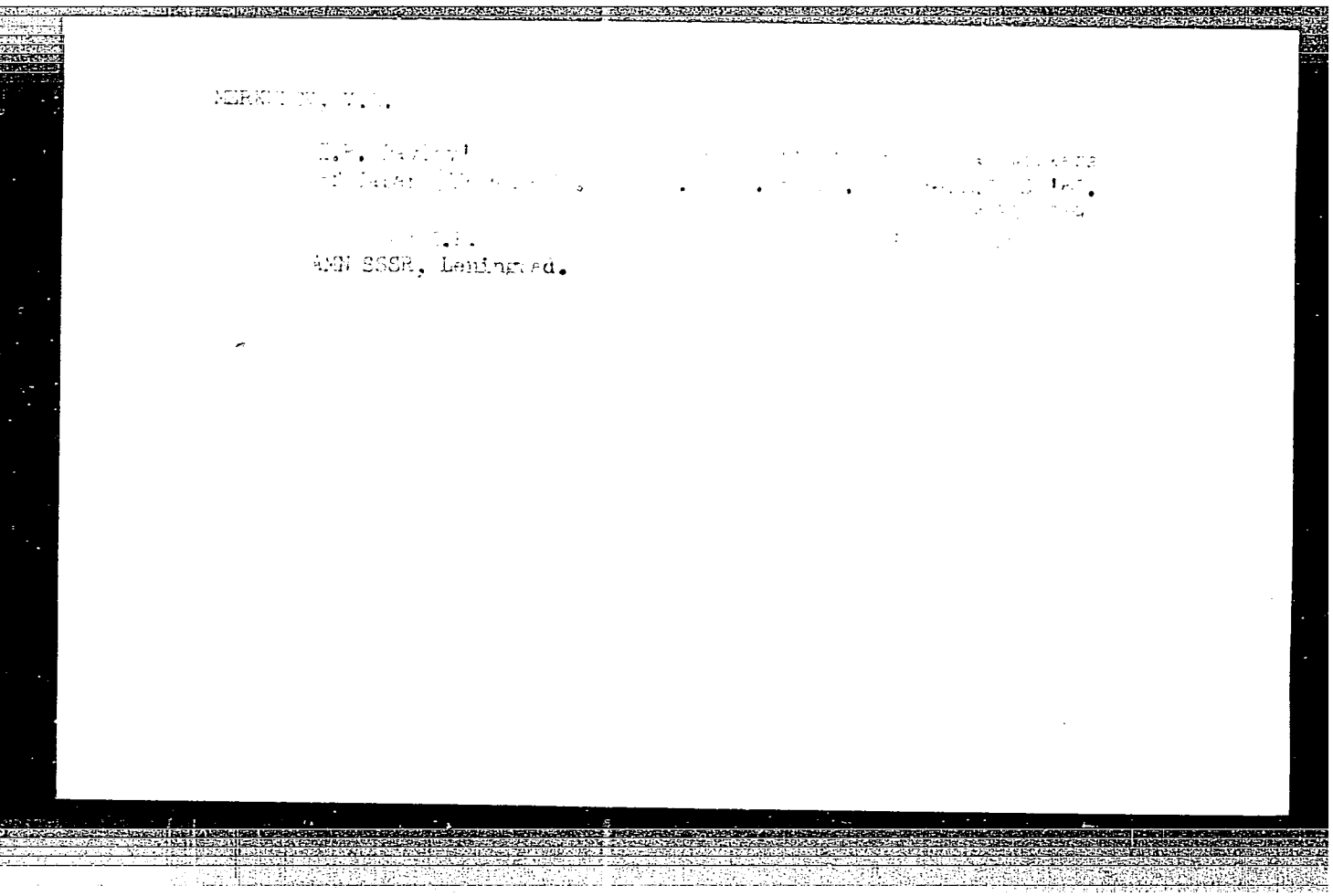
[Experimental epileptiform hyperkinesia] Eksperimental'nye epileptiformnye giperkinezy. Leningrad, Medgiz, 1963. 190 p. (MIRA 16:7)

(MOVEMENT DISORDERS) (EPILEPSY)

MERKULOV, V.L.

Vvedenskii's investigations of the reflex regulation of respiration and his theory of parabiosis. Nerv. sist. no.4:96-100 '63
(MIRA 18:1)

1. Institut eksperimental'noy meditsiny AMN SSSR, Leningrad.



25(1) PHASE I BOOK EXPLOITATION SOV/1468

Merkulov, Vasiliy Nikitovich, and Aleksey Ivanovich Shornikov, Adjusters at the Kuntsevo Platinum Needle Factory

Ot ruchnogo stanka k avtomatu (From Manually-operated Tools to Automatic Machinery) /Moscow/ Moskovskiy rabochiy, 1957. 75 p. (Series: Opyt novatorov moskovskikh predpriyatiy) 4,000 copies printed.

Ed.: S. Gurov; Tech. Ed.: I. Yegorova.

PURPOSE: This booklet on the introduction in the USSR of machines for making knitting needles is for the general reader.

COVERAGE: The booklet covers the development of machines for making knitting needles in the USSR. Achievements of Soviet engineers and inventors at the Kuntsevo Plant imeni KIM are praised and claimed to be superior to non-Soviet developments. The authors tell how a platinum needle was produced outside the Soviet Union and how Soviet designers produced it and improved on the machines for making needles. Photographs of workers at their machines accompany the text. There are no references.

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From Manually-operated Tools (Cont.) SOV/1468

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AVAILABLE: Library of Congress

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GO/mtl
4-30-59

MERKULOV, V. P. PA 233T17

USSR/Medicine, Veterinary - Swine Erysipelas Oct 52

"Depot-Forming Erysipelas Vaccine of Swine of the Dnepropetrovsk Biological Factory," V. P. Merkulov, A. B. Epshtein

"Veterinariya" Vol 29, No 10, pp 27, 28

A depot-forming vaccine for erysipelas of swine which can be stored in excess of 6 months and is prepd from Matrix II of Konev's vaccine of the Dnepropetrovsk Biol Plant is a reliable prepn for the control of bacillary erysipelas of swine. This vaccine possesses high immunological properties. It creates a depot in the area where it is inoculated, resulting in reduction to a min of the number of complications.

233T17

MERKULOV, V. F.

"The deposition of vaccine against swine erysipelas." Min Agriculture USSR. Khar'kov Veterenary Inst. Khar'kov, 1956. (Dossertations for the Degree of Candidate in Veterinary Science)

So: Knizhaya letopis', No. 16, 1956

[illegible]LGHUYAN, [illegible]; [illegible]ATS[illegible]YUK, [illegible] [illegible], [illegible]

[illegible] the [illegible] group on [illegible] [illegible] Permanent Comm[illegible] and Scientific Collaboration [illegible] Problems. [illegible] no.5:76-80 [illegible] '59. (MIRA 12:7)

(V[illegible])

MERKULOV, V.P., kand.veterin.nauk; EPSHTEYN, A.B., kand.veterin.nauk

Use of precipitated vaccine against swine erysipelas. Veterinariia 40 no.7:31 Jl '63. (MIRA 16:8)

1. Gosudarstvennaya Dnepropetrovskaya biofabrika.
(Swine erysipelas--Preventive inoculation)

MERKULOV, V. P., Cand Tech Sci -- (diss) "Concerning the output of horizontal and ~~inclined~~ slanting oil wells." Baku, 1957. 12 pp. (Min Higher Ed USSR), Azerbaydzhan Order of Labor Red Banner Indust Inst im M. Azizbekov), 100 copies. (KL, 9-58, 118)

MERKULOV, V.P.

Flow toward a horizontal well of finite length in a layer of finite thickness. Izv. vys. ucheb. zav.; neft' i gaz no.1:73-80 '58.
(MIRA 11:8)

1.Azerbaydzhanskiy industrial'nyy institut im. M. Azizbekova.
(Hydraulics)

MERKULOV, V.P.

Yield of directional and horizontal wells. Neft. khoz. 36 no.6:51-56 Je '58. (MIRA 11:9)
(Petroleum engineering)

SURGUCHEV, M.L.; MERKULOV, V.P.

Determining yield and effectiveness of directional wells. Neft. Khoz. 38 no.2:35-41 F '60. (MIRA 13:8)
(Oil well drilling)

SOLDATOV, A.M.; TIMOFEYEV, A.I.; SPIRIN, P.V.; MERKULOV, V.P.; MENDKOVICH, Z.Ya.

Disintegration of rocks and metal by the sand-jet method.
Neftepром. delo no.11:12-16 '64. (MIRA 18:3)

1. Kuybyshevskiy nauchno-issledovatel'skiy institut neftyanoy promyshlennosti.

MERKULOV, V.S.

Atomic batteries. Izm.tekh. no.2:94-97 Mr-Ap '58. (MIRA 11:3)
(Nuclear engineering)

AUTHOR: Merkulov, V.S.

SOV-115-58-4-21/45

TITLE: Determining Weight by the β-Radiation Absorption Method (Error Curves) (K voprosu opredeleniya vesa metodom poglo-shcheniya β-izlucheniya (krivyye oshibok)

PERIODICAL: Izmeritel'naya tekhnika, 1958, Nr 4, pp 43-45 (USSR)

ABSTRACT: The thickness of an object may be calculated from a comparison of the intensity of a β-radiation beam before and after passing through the object. The author describes a method for calculating weight by this radiation absorption factor and adduces a set of statistical measurement error curves for the most commonly used source materials. There are 4 graphs and 1 table.

1. Beta particles--Applications 2. Measurement--Errors

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SOV/115-59-5-27/27

21(1)

AUTHOR: Merkulov, V.S.

TITLE: Radioactive Sources in Measuring Techniques

PERIODICAL: Izmeritel'naya Tekhnika, 1959, Nr 5, pp 62-63 (USSR)

ABSTRACT: The author presents a schedule of radioactive isotopes, their "half-value-time", their energy of radiation and their use. They are arranged according to their radial type. There is 1 layout.

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21(4), (3)

S/115/60/000/04/032/041
D002/D006

AUTHOR: Merkulov, V.S., Klimushev, A.V.

TITLE: The "Isotopes" Demonstration Hall-cum Store

PERIODICAL: Izmeritel'naya tekhnika, 1960, Nr 4, pp 57-58 (USSR)

ABSTRACT: In Moscow, in December 1959, the "Isotopes" Demonstration Hall-cum-Store of the Vsesoyuznaya kontora "Isotopy" (All-Union "Isotopes" Office) of the "Soyuzreaktiv" Trust of the Gosudarstvennyy komitet Soveta Ministrov SSSR po khimii (State Committee of the Council of Ministers of the USSR on Chemistry) was opened. The store takes orders for radioactive and stable isotopes, nuclear radiation sources, and various protective devices, and serves at the same time as an exhibition and propaganda center for checking-measuring devices and methods based on nuc-

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The "Isotopes" Demonstration Hall-cum-Store

lear radiation. At the present time, several dozen radioactive devices and installations for the control and automation of technological processes are manufactured. At the department of checking-measuring devices the following devices are shown, characterizing some basic isotope applications: piece-production counting relays ("RSP-11"), level meters for fluids and loose dry materials ("RIU-1" and ("UR-6A"), fluid density meters ("PZhR-2"), ionization pressure gages ("MIR-3A"), automatic fire alarm devices ("ADI-1"), and a variety of radiometer and dozimeter equipment for alpha-, beta, gamma-radiation and neutrons. The "RSP-1" radioactive item-counter is intended to count similar items on a conveyer; the "RSP-11" counts up to 100 items per minute. It consists of standard blocks by means of which it is

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The "Isotopes" Demonstration Hall-cum-Store

possible to check the geometric shape and the dimensions of the items. The "RIU-1" level meter determines the separation line of two media having different densities (gaz-fluid, gas-solid) with a permissible error of ± 2 cm and an operation time of no more than 2 seconds. The "PZhR-2" gamma fluid-density meter is for remote measurements of fluids in the 1.0 to 1.5 g/cm^3 range, with an error not exceeding ± 5% of the magnitude 0.5 g/cm^3. The "MIR-3A" pressure gage (with alpha radiation source) is based on the measurement of the flow in the ionazation chamber containing the gas to be checked, and measures the pressures of gases and steam in the 0.01 to 10 mm mercury column range with an error of ± 5% for each subrange. The "ADI-1", a com-

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The "Isotopes" Demonstration Hall-cum-Store

ponent for a smoke and heat signal station, ensures the operation of the signal installation when light smoke cloud appears in a room. The following new devices are forseen: Thickness meters for sheet materials ("ITU-495", "ITSh-496", "GT-150"), layer thickness meters ("BTP-1", "ITP-476"), and a potassium concentration meter ("RKK-B-1"). The "ITU-495" is a beta-ray meter measuring automatically the thickness of moving strip in the rolling process, in a range from 0.03 to 1 mm and can also be graduated for measurements of other materials in 0.02-0.8 g/cm^2 range. The "BTP-1" measures the thickness of coating on metal in the range of 0 to 10 milligrams/cm^2; the relative error of its electronic part being $\pm$2%. It is based on the measurement of the intensity of beta radiation reflected from the material checked,

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The "Isotopes" Demonstration Hall-cum-Store

and can measure any layer if its atomic number differs from the number of the base. The "RKK-B-1" measures the intensity of beta radiation of the natural potassium isotope "potassium 40" and determines within 10-15 minutes the potassium content of 0 to 20% solutions with an error of 1.5%, thus replacing complicated chemical analysis. Of standard radiometeric and dosimeteric instruments, there are "B-2", "PS-10000" ("Floks"), and "PK-1000" converters; the universal radiometer "TISS", the "LUCh-A" scanning radiometer, "KID-1", and "DK-0,2" individual dosimeteric control sets. Industrial gas-discharge meters for recording alpha-, beta-, gamma-radiation, and neutrons, photoelectronic multipliers, as well as scintillators, are exhibited. Of scintillators,

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there are anorganic "Naj (Tl)", "CsJ(Tl)", and "KJ (Tl)", as well as organic, i.e. monocrystals of anthracene, stilbene, tolan, naphthalene with anthracene, as well as plastic scintillators on a polyststyrene base with scintillating additives. The departments of isotopes and radiation sources will mainly supply the organizations developing radioactive equipment, and establish contact between the clients and the producing plants. Through the isotopes and radiation sources departments orders may be placed for isotopes in standard batches and gamma-radiation sources in ampules (thullium-170, iridium-192, cesium-137, cobalt-60, etc); and for ready beta-ray sources in the form of discs or plates (promethium-147, thallium-204, strontium-90 + yttrium-90, cerium-144 + praseodymium-144, ruthenium-106 + rhodium-106,

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The "Isotopes" Demonstration Hall-cum-Store

etc). The activeness of some beta-sources can be raised to 100 millicurie/cm^2. Trace alpha, beta and gamma sources may also be ordered. The department of protection equipment has containers, iron and lead blocks, transportable screens of lead glass, hand manipulators, lifting devices; special clothing ("LG-4" pneumo-suit, "ShB-1" respirator, gloves, sleeves). Among laboratory furniture there is a work chamber with one seat, for work with alpha, beta and gamma preparations. Vacuum down to 20 mm of water column is produced in it for the work time, and it is fitted with exhaust ventilation, a viewing window, input pipes, drain funnels, a collector for radioactive waste, and gloves. The store will arrange exhibitions of special subjects, consultations

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D002/D006

The "Isotopes" Demonstration Hall-cum-Store

by qualified specialists, and demonstrations of popular scientific movie pictures on the nonmilitary use of atomic energy, will sell manuals and catalogues, will keep information on latest developments and foreign literature on the use of isotopes. Orders are accepted only from clients having special permission to work with radioactive materials.

Card 8/8

S/119/60/000/010/014/014
B012/B063

21.7100

AUTHORS: Klimushev, A. V., Engineer, Merkulov, V. S., Engineer

TITLE: A Criterion for the Selection of Shielding Diaphragms for Measurements by the Method of Attenuation of Beta Radiation

PERIODICAL: Priborostroyeniye, 1960, No. 10, pp. 30 - 31

TEXT: When using the method of attenuation of beta radiation for measuring the density of gases, it is frequently necessary to use shielding diaphragms. As the accuracy of measurement is reduced by these diaphragms, it is necessary to reduce their thickness. A corresponding decrease of the radiation flux leads to an increase of the statistical error in the recording of radiation. These factors are to be considered for an optimum selection of the dimensions of shielding diaphragms. Formula (1) is written down for the absolute error Δm_1 in the determination of the gas mass on the radiation path, which is due to the above-mentioned statistical error (Ref. 1). Then, the condition of strength (2)

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is written down. The latter expresses the relationship between the diameter, a, of a round shielding diaphragm and its thickness, h (Ref. 2). After making some assumptions for the purpose of simplifying the problem, the authors derive formula (5) for the absolute error Δm_1 in the determination of mass as a function of the mass attenuation coefficient μ_0 and of the thickness, h, of the shielding diaphragm. a and h are interrelated by the formula. Next, the authors determine the values of μ_0 and h at which the error Δm_1 attains its minimum. Formulas (6), (6a), (7), and (7a) are obtained, from which it may be seen that the error Δm_1 decreases with increasing h and with a corresponding decrease of μ_0. h and μ_0 are interrelated by formulas (6) and (6a). For an optimum selection of the parameters of the diaphragm and the source it is necessary to take a as high as possible according to the conditions of measurement. h is determined from formula (2) and μ_0 from formula (6). As the set of isotopes is very limited, formula (6) can be satisfied only approximately. Table 1 gives h- and a-values for numerous isotopes. The

A Criterion for the Selection of Shielding Diaphragms for Measurements by the Method of Attenuation of Beta Radiation

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criterion for the selection of the diaphragm material may be determined from formulas (7) and (7a). The error in measurement decreases with a decrease of the ratio $\varrho/\sqrt{\sigma}$. Table 2 gives the values of this parameter for several materials. σ denotes the breaking stress of the diaphragm material in kg/mm^2, and ϱ is its density (Refs. 3 and 4). There are 2 tables and 4 Soviet references.

Card 3/3

S/076/60/034/06/36/040
B015/B061

AUTHORS: Merkulov, V. S., Klimushev, A. V. (Moscow)

TITLE: The Component Analysis of Binary Systems by the Weakening of γ-Radiation

PERIODICAL: Zhurnal fizicheskoy khimii, 1960, Vol. 34, No. 6, pp. 1373-1376

TEXT: The method of the weakening of γ-radiation for the component analysis of binary systems has already been used by several researchers (Refs. 1-5). Various mixtures, emulsions, solutions, and chemical compounds have been analyzed in this way. On the analysis of a chemical compound, each element whose content is to be determined, is considered as one component, and the rest of the compound as the other component. The theory of the method is discussed generally here. The elucidations are carried out on the basis of various publication data, and among other things diagrams (Fig.) on the dependence of the mass absorption coefficients on the energy of the gamma-quanta are given for some elements. There are 1 figure and 8 references: 2 Soviet and 3 American.

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The Component Analysis of Binary Systems by the Weakening of γ-Radiation

S/076/60/034/06/36/040
B015/B061

SUBMITTED: October 16, 1959

Vc

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L 19561-63 EWT(m)/BDS AFFTC/ASD/AFWL

ACCESSION NR: AP3005693 S/0241/63/008/008/0066/0071

AUTHOR: Merkulov, V. S.; Martynova, Ye. Ye.; Barynin, V. A. *B

TITLE: Two channel nuclear radiation recorder built with a TISS universal radiometer as a base

SOURCE: Meditsinskaya radiologiya, v. 8, no. 8, 1963, 66-71

TOPIC TAGS: radiation recorder, two channels, TISS radiometer, scintillator, counter

ABSTRACT: This new recorder is built with a TISS radiometer as a base, and registers isotope radiation flows over two channels simultaneously on a pointer indicator and a loop oscillograph. The recorder includes two scintillator counters and a 20 meter cable for distant measurements. All supplementary electric system elements are mounted in the base for convenience of servicing. Alterations and modifications of the TISS radiometer are described in detail. An experimental model of this recorder has passed laboratory tests and has been used for recording radiation intensities from two data units. Orig. art. has 3 figs. and 2 supplements.

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S/115/61/000/004/009/010
B129/B206

AUTHOR: Merkulov, V. S.

TITLE: Devices of Soviet production applying radioactive isotopes

PERIODICAL: Izmeritel'naya tekhnika, no. 4, 1961, 61-63

TEXT: An exposition "Application of Radioactive Isotopes for the Control and Automation of Manufacturing Processes" was held at the "Atomic Energy" Pavilion at the end of 1960. About 150 exhibits, installations, instruments and devices, including dosimeters and protective equipment were shown. Various types of radioactive relay devices, fluid gages, thickness gages, densimeters, defectoscopes, and other instruments, which are used in various branches of industry, were exhibited. Great interest was aroused by the beta- and gamma-radiators of the types БИ-1 (BI-1), БИ-2 (BI-2), ГИ-1 (GI-1), and ГИП-1 (GIP-1), radioactive pickups of the types РД (RD) and УРАП (URAP), universal electronic relay blocks of various types, used as elements for various instruments and devices for automatic control and regulation with application of radiation of radioactive isotopes. For the radiators BI-1 and BI-2, Sr^{90} is used with an

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Devices of Soviet production...

activity of 0.5 and 0.2 Millicurie respectively, and for GI-1 and GIP-1 (float), Co^{60} with an activity of 100 and 0.5 mg-equiv. radium. The radiators are hermetically sealed. The pickups RD are intended for recording radiation of radioactive isotopes and their conversion into electric pulses. The beta-radiation pickups РД-6 (RD-6) and РД-9М (RD-9M) are complemented by СТС-5 (STS-5) gas-discharge counters, and РД-10 (RD-10) with the counter СТС-12 (STS-12), the gamma-radiation pickups RD-11M are complemented by the counters STS-1 and RD-14 with 5 counters STS-5, and RD-15 with 10 counters STS-5. URAP-2AM and URAP-3DM are used in combination with the pickups shown, for the purpose of amplification of the electric pulses received by the pickups and their transmission to the executing mechanisms. New exhibits were prototypes of devices for continuous automatic analysis of the composition of substances, for the determination of the concentration of aggressive media and for determining the concentration of an aqueous solution of methanol during the production of formalin. The principle of the analyzer for this determination is based on the degree of absorption of Sr^{90} beta-rays as a function of the composition of the mixture to be analyzed. The following exhibited

S/115/61/000/004/009/010
B129/B206

instruments, which are used for geological investigation, are mentioned: the field installation ВИМС-58 (VIMS-58) for the combined analysis of ores and minerals by the X-ray radiometric method under working condition; the universal laboratory installation ФНУВ-4-59 (FNUV-4-59) for the quantitative determination of beryllium in ore samples, in concentrates and products in metallurgical processing; and devices for the investigation of petroleum wells by using Co^{60} sources. Likewise, a great number of radioactive measuring instruments and devices were shown for keeping constant the levels of liquid and boiling media in closed containers, radioactive relay devices, measuring instruments for thickness, density of materials etc. There is 1 table.

MERKULOV, V.S.; MARTYNOVA, Ye.Ye.; BARYNIN, V.A.

Two-channel recorder of nuclear radiations on the basis of the "TISS" universal radiometer. Med. rad. 8 no.8:66-71 Ag '63. (MIRA 17:10)

L 7654-66 EWT(m)/ETC(m) DIAAP WW

ACC NR: AP5025058 SOURCE CODE: UR/0286/65/000/016/0099/0099

AUTHORS: Shervinskiy, V. Ye.; Merkulov, V. S.

65
B

ORG: none

TITLE: Radioisotopic device for measuring pressure and rarefaction. Class 42, No. 173994

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 16, 1965, 99

TOPIC TAGS: radioisotope, pressure gage, ionization detector, ionizing radiation, gas ionization, nuclear physics apparatus, physics laboratory instrument

ABSTRACT: This Author Certificate presents a radioisotopic device for measuring pressure and rarefaction. The device contains a sensitive unit in the form of a sealed flexible reservoir of variable volume, enclosed in a protective jacket and open to the medium the pressure of which is to be measured (see Fig. 1). To increase the measurement accuracy of the parameter under investigation, the variable volume reservoir is filled with a radioactive gas and is connected to a constant volume reservoir. The latter is provided with a detector of ionizing radiations. The detector is acted upon by the nuclear radiation from the atoms of the

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UDC: 531.787

L 7654-66

ACC NR: AP5025058

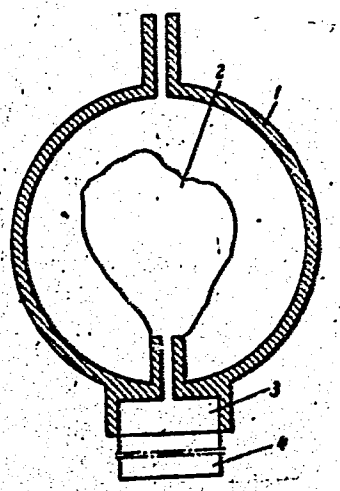


Fig. 1. 1- protective jacket; 2- variable volume reservoir; 3- constant volume reservoir; 4- detector of diminishing radiations

radioactive gas contained in the constant volume reservoir. Orig. art. has: 1 figure.

SUB CODE: 20,18/SUBM DATE: 03May63

Card 2/2

ACC NR: AP6026953 SOURCE CODE: UR/0115/66/000/007/0081/0084

AUTHOR: Gavrilov, F. V.; Merkulov, V. S.

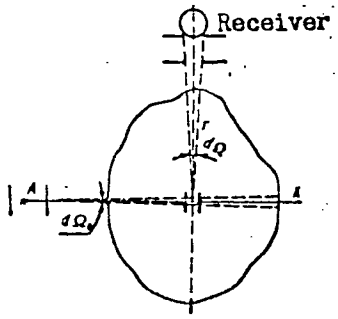
ORG: none

TITLE: Positron method of determining local gas density

SOURCE: Izmeritel'naya tekhnika, no. 7, 1966, 81-84

TOPIC TAGS: vacuumeter, vacuum measurement, positron, gas flow, rarefied gas

ABSTRACT: Optical, x-ray, and radioactive methods of determining density of rarefied-gas flow yield averaged (in the direction of probing beam) integral values. A new method of strictly local density determination is suggested which is based on measuring the annihilation radiation that arises when a positron beam traverses the gas flow being investigated (see figure). It is shown that the gas density is given by:



$$\rho(x) = \left[\frac{\psi^{1/3}(x)}{\int_0^x \psi^{-1/3}(x)\,dx + \frac{b^2}{\psi^{1/3}(0)}}\right]^{1/2}.$$

Further, it is proven that the intensity of positron radiation is approximately proportional to the gas density. A set of high-

Card 1/2 UDC: 533.12.083.9

ACC NR: AP6026953

efficiency scintillation counters can be used as a gamma-quanta receiver; the λ-factor may be expected to reach 10^5 quanta per min per curie of positron-source activity. A measuring error of 1% may be expected from such an instrument. Inexpensive short-living isotope Cu^{64} is suggested as a source of positrons; other long-living sources, such as Na^{22}, Co^{58}, Rh^{102}, Ni^{57}, also look promising. Orig. art. has: 4 figures and 17 formulas.

SUB CODE: 20 / SUBM DATE: none / ORIG REF: 002 / OTH REF: 002

Card 2/2

MERKULOV, V.T.

Device for replacing supports. Avtom. telem. i sviaz' 2 no.10:30-31 O '58. (MIRA 11:10)

1.Nachal'nik Kzyl-Ordinskoy distantsii signalizatsii i svyazi Tashkentskoy dorogi.
(Electric lines--Poles)

AUTHOR: MERKULOV, V.V. PA - 3559

TITLE: Theory of Electromagnetic Wave Propagation in Medium with Random Fluctuation of Refractive Index. (K teorii rasprostraneniya elektromagnitnykh voln v sredakh so sluchaynymi neodnorodnostyami pokazatelya prelomleniya, Russian)

PERIODICAL: Zhurnal Tekhn. Fiz., 1957, Vol 27, Nr 5, pp 1051 - 1055 (U S S R)

ABSTRACT: In the present paper a new field characteristic - the correlation function of the dispersing field - is introduced. This comprises the fluctuations of the field both according to amplitude and phase With the aid of this function the problem concerning the diffraction of electromagnetic waves with random amplitude and phase at the aperture of the receiving system is solved. It is assumed that the electric constant ε of the medium fluctuates round its mean value (which is equal to 1) and that the chance deviations of ε from the mean value are inconsiderable: $\varepsilon = 1 + \Delta\varepsilon$; $|\Delta\varepsilon| \ll 1$. The equations for the electromagnetic field in a medium with random fluctuation are written down, and the final equation for the field $\overline{E}$ (0) is derived under the assumption that magnetic permeability and electric conductivity are equal to 1 and zero respectively, that the dependence of electromagnetic processes on time is given by the function $e^{i\omega t}$, and that the pulsation frequency of the di- electric constant is considerably lower than ω. Next, the statisti- cal properties are investigated and the correlation function of

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the dispersing field is derived. The equation for the same function in the case of the passage of the wave through a turbulent layer in dependence on the distance L between the points (0,0,0) and (0,L,0) on the boundary of the layer is derived. Herefrom it may be seen that the measure of irregularities of the dispersing field agrees with that of the irregularities of the dispersing medium By means of the correlation function of the dispersing field the distribution of intensity of the field behind the ions around the focus on the occasion of the incidence of an electromagnetic wave with a random amplitude and phase can be determined. A formula is derived from which it can be seen that, on the occasion of the diffraction of the dispersing wave, th interference image is distroyed and the intensity of the image gradually diminishes with growing distance from the focus
(With 5 Slavic references)

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