

SOV/56-34-5-50/61

On the Problem of the Ambipolar Diffusion in a Magnetic Field

in publications has the advantage that the concentration of the electrons in the plasma need not be measured. Hence, the decrease of  $D_{\perp}$  is not accompanied by a just as great decrease of the diffusion current on the wall, when the longitudinal inhomogeneity is disturbed. There are 2 figures and 6 references, 4 of which are Soviet.

SUBMITTED: February 1, 1958

1. Magnetic fields—Electrical effects    2. Ionic current  
--Measurement    3. Mathematics—Applications

Card 3/3

KADOMTSEV, B.B.; NEDOSPASOV, A.V.

[Instability of a positive column in a magnetic field,  
and "anomalous" diffusion] Neustoichivost' polozhitel'-  
nogo stolba v magnitnom pole i "anomal'naiia" diffuziia.  
Moskva, In-t atomnoi energii, 1959. 14 p.

(MIRA 17:2)

NEDOSPASOV, A.V., kand.fiz.-mat.nauk; LOMONOSOVA, L.S., inzh.; NOVIK,  
A.Ye., inzh.

Cathode emission in fluorescent lamps. Svetotekhnika 5  
no.9:7-9 S '59. (MIRA 13:2)

1. Moskovskiy elektrolampovyy zavod.  
(Flourescent lamps)

Cite as:

111  
36

**AUTHORS** Melnikov, A. M., Pankov, V. I., and Krasovskii, R.

**TITLE** Investigation of Diffraction of Light

**PERIODICAL** Zhurnal teoreticheskoy i prikladnoy optiki, Vol. 1, No. 1, p. 11-15, 1978  
ISSN 0013-788X USSR

**ABSTRACT** Striations were observed in a medium with a periodic structure and a light beam was scattered. Diffraction of light by gratings with periodic structures perpendicular to the optical axis was studied. It was shown that the properties of the diffraction spectra depend on the geometry of the grating and the angle of the incidence. It was shown that the diffraction of light by gratings with a periodic structure parallel to the optical axis is also influenced by the structure of the grating. The diffraction of light by gratings with a periodic structure parallel to the optical axis was investigated with the aid of a diffraction grating with a periodic structure parallel to the optical axis. Multiple angles of incidence of light on a grating with a periodic structure parallel to the optical axis changed the pattern of the diffraction spectra.

Card 1 of 1

International ...

...

part of ...

Carroll ...

Investigation of the ...

...

$$I = \frac{2\pi r H \rho}{S}$$

where  $I$  = total current;  $r$  = radius of wire;  $H$  = length of wire;  $\rho$  = resistivity of wire;  $S$  = cross-sectional area of wire. ... (ZETP, 1961, ...). ... (D. ... 1961, ...). ... Report of the ...

Card 3/7

Intensity of Stratification in Arcs

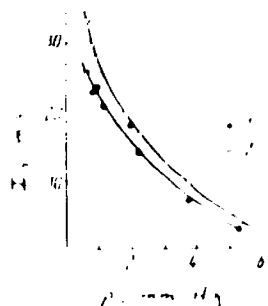


Fig. 1. Ion current  $i_w$  on the wall in one stratification region versus arc current. Discharge current: (•) 1.5 mA; (◻) 2.0 mA. Diameter of cathode: 1.5 mm.

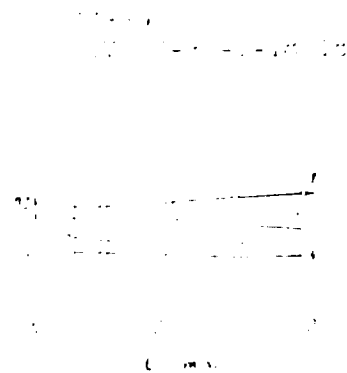


Fig. 2. Quantity  $I/i$  versus discharge current. At average pressures: (•) 1.0 mm Hg; (◻) 1.5 mm Hg; (◻) 2.0 mm Hg.

Cont. 4.79

Investigations of Striations in Arsen

77339  
307/57-30-1-18/18

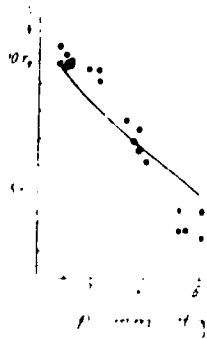


Fig. 1. Striations in arsenic. The points are from the same series. The line is the model of the points. The points are from series B for  $\lambda = 100$  and  $150 \mu\text{m}$ .

Card 5/9



Investigation of Transition in Water

Fig. 1  
Temperature vs. Time

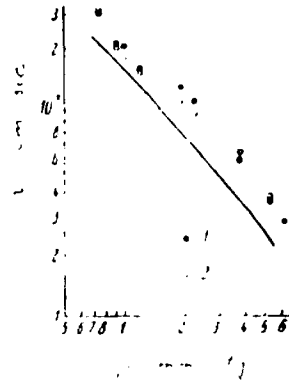


Fig. 1 shows the temperature (in degrees Celsius) and time (in minutes) of the transition in water. The transition is observed at approximately 3.5 minutes. The temperature is approximately 10 degrees Celsius at this time. The transition is observed at approximately 3.5 minutes. The temperature is approximately 10 degrees Celsius at this time.

Card 5/9

Investigations of Discharge in Argon

7759  
NOV 57-30-1-18/18

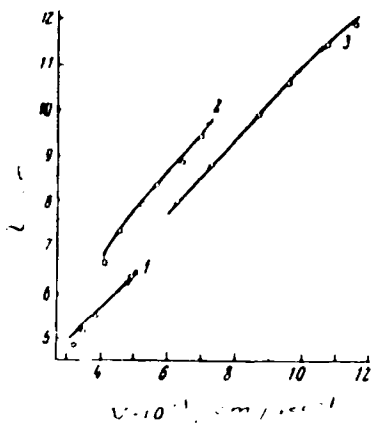


Fig. 1. Length of discharges versus their velocity. Quantities calculated without allowance for ionization are denoted by numbers: (1) argon pressure 2 mm Hg, discharge current 100 mA; (2) argon pressure 4 mm Hg, discharge current 100 mA; (3) argon pressure 2 mm Hg, discharge current 200 mA. Tube diameter 1.5 mm.

Card 7/9

Investigations of Striations in Arcs

W 49

SOV/57-35-1-18/18

1958). Curve on Fig. 4 also agrees well with the theoretical predictions. Errors were usually not worse than 5%. A. A. Zaytsev gave advice and discussed the paper. There are 6 figures; and 3 references, 4 Soviet, 1 German, 1 U.K., 2 U.S. The U.K. and U.S. references are: V. D. Farris, Proc. of Phys. Soc., B<sup>2</sup>, 381, 1955; A. R. Stewart, J. of Appl. Phys., 27, 911, 1956; V. D. Farris, J. of Electronics, 1, Ser 1, 6, 1955.

SUBMITTED: October 2, 1958

Card 8/9

Investigations of Stratospheric

1967-1968

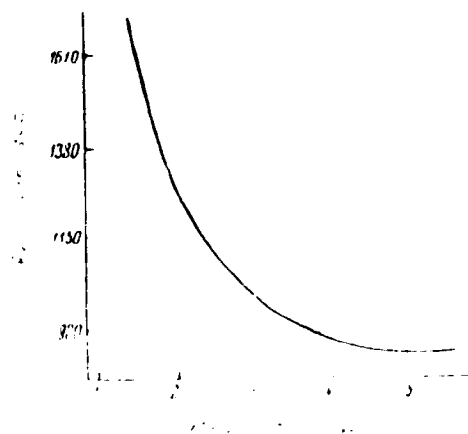


Chart of ...

84561

S/057/60/030/011/004/009

B006/B054

9.4120 (1105, 1138, 1140)

AUTHORS: Nedospasov, A. V. and Novik, A. Ye.TITLE: Propagation Velocity of the Ionization Front in Spark-over  
in Long Discharge TubesPERIODICAL: Zhurnal tekhnicheskoy fiziki, 1960, Vol. 30, No. 11,  
pp. 1329-1336

TEXT: The authors report on experimental studies of phenomena appearing in spark-over in long ( $l \gg r$ ) gas discharge tubes with a fast voltage increase ( $10^5 - 10^6$  v/sec). Above all, the authors studied the ignition processes under conditions similar to those with ignition of luminescence tubes, without a starter, and determined the dependence of the velocity of the ionization front on various conditions. At first, they describe the experimental arrangement (circuit diagram - Fig. 1), and discuss the method of measurement. The tubes had diameters of 15, 25, and 38 mm, and lengths of 47, 88, and 120 cm, respectively, and were filled with chemically pure argon (0.5 - 10 mm Hg). The measurement results are shown in diagrams. Fig. 2 shows current oscillograms obtained from a set of Al foil

Card 1/3

84561

Propagation Velocity of the Ionization Front S/057/60/030/011/004/009  
in Spark-over in Long Discharge Tubes B006/B054

capacitor plates. These plates, being arranged along the discharge tubes at half the tube diameter, had a length equal to the diameter of the tubes. Fig. 3 shows the dependence of the displacement time (in  $\mu\text{sec}$ ) of the ionization front on the distance (in cm) from the ignition electrode; Fig. 4 shows the dependence of the velocity of the ionization front on the amplitude of the voltage applied (800 - 1400 v); Fig. 5 shows the dependence of the velocity of the ionization front on the frequency of the voltage (50 - 200 cps); Fig. 6 shows the pressure dependence of the velocity of the ionization front (0.5 - 10 mm Hg); and Fig. 7 shows the pressure dependence of the charge hitting 1 cm of the tube wall. Figs. 3, 4, 5, and 7 (approximately) show ascending straight lines, and Fig. 6 shows a hyperbolic branch. In the last part of the paper the authors first discuss the processes leading to a discharge, after which they give a theoretical interpretation and discussion of the results. The short discharges between the electrode and the walls along the tube are accompanied by ionization and the formation of primary plasma. The rate of this process is determined by the kind and pressure of the gas, the tube diameter, the wall capacity and the rate of variation of the electrode potential. G. V. Spivak and Ye. L. Stolyarova are mentioned. There are 8 figures, 1 table and

Card 2/3

Propagation Velocity of the Ionization Front <sup>81561</sup> S/057760/030/011/004/009  
in Spark-over in Long Discharge Tubes B006/B054

15 references: 7 Soviet, 3 German, 4 US, and 1 British.

SUBMITTED: April 20, 1960

X

Card 3/3

S/089/62/013/005/005/012  
B102/B104

AUTHOR: Nedospasov, A. V.

TITLE: Local field inhomogeneities in magnetic mirror traps

PERIODICAL: Atomnaya energiya, v. 13, no. 5, 1962, 472-473

TEXT: Magnetic field inhomogeneities leading to changes of the adiabatic invariant  $I = v_{\perp}^2/H$  and caused e. g. by the ion injector in "Ogra" or "Ogrenok" devices are considered. These changes are now estimated on the assumption that the ions are scattered from small dipole perturbations whose moments are parallel to the fundamental field. For

$$\dot{V} = \frac{e}{m_i} (VH)_{\parallel} \quad (1)$$

$$H = e, H_0 + h$$

$$h = \frac{3(Mr)r}{r^3} \quad (2)$$

Card 1/4



Local field inhomogeneities in ...

S/089/62/013/005/005/012  
B102/B104

giving the change in the longitudinal velocity component of the charged particles, a solution of the kind  $V = v_0 + v$  is sought.  $v_0$  is the velocity of the unperturbed motion,  $|v| \ll v_0$ . If also  $|h| \ll H_0$ ,  $\dot{v} = \frac{e}{mc} v_0 h_z$  holds in first approximation. The introduction of cylindrical coordinates (Fig. 1) leads to

$$v_z = 3M\omega_H^2 Q_3 v_0 \frac{Q_3 \cdot R \sin(\omega_H t + \alpha)}{r^3} \quad (4)$$

$$r^2 = r^2 \cdot R^2 \cdot Q_3^2 \cdot 2HQ_3 \sin(\omega_H t + \alpha) \quad (5)$$

$$\frac{Q_3}{R} = y \cdot \omega_H t + x \frac{v_0}{r_0} \quad (k_1 = b)$$

$$\frac{\delta v}{v} = \frac{h_z H_0}{H_0} \frac{y^2 + x^2}{r^2} \quad (5)$$

$$f(y, \alpha, b) = \int_{-\infty}^{\infty} \frac{x |y + \sin(x + \alpha)| dx}{[1 + y^2(1 + b^2 x^2) + 2y \sin(x + \alpha)]^{3/2}} \quad (6)$$

Card 2/4

Local field inhomogeneities in ...

S/089/62/013/005/005/012  
B102/B104

where  $\alpha$  is the phase angle at which the particle passes through the plane  $z=0$  and  $i$  is the angle of inclination of the velocity vector to a plane which is perpendicular to the magnetic field.  $f(\alpha)$  was computed for  $b^2 = 0.18, 0.35$  and  $0.5$ . The first value corresponds approximately with the injection angle of "Ogra" and "Ogrenok". If multiple scattering is taken into account, one obtains for the "stochasticity condition" (cf. Atomnaya energiya, v. 6, no. 6, 630, 1959) the hypothetical inequality (7):  $\delta v_{\parallel}/v_{\parallel} \geq 2v_{\perp}e/L$ .  $L$  is the path between two scattering events. For "Ogra"  $e/L = 1 \cdot 10^{-4}$  and for "Ogrenok"

$e/L = 5 \cdot 10^{-4}$ , so that  $\delta v_{\parallel}/v_{\parallel} \geq 2 \cdot 10^{-3}$ . If  $\Delta I^2/I^2 \approx 10^{-1}$  particles will escape through the mirror. If the field perturbation is characterized by  $\beta = H_{\text{dipole}}/H_{\text{fund}}$ , the approximate shape of the  $\beta(y)$ -curve may be found. It has a minimum somewhere between  $y=0.3$  and  $0.5$ . The condition (7) is satisfied in "Ogra" for  $\beta \lesssim 1\%$ , in an axisymmetric field it is violated. There are 3 figures.

SUBMITTED: July 9, 1962  
Card 3/4

Local field inhomogeneities in ...

S/089/62/013/005/005/012  
B102/B104

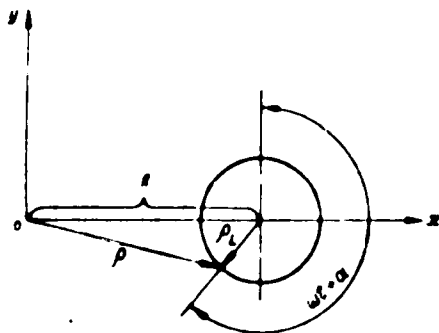


Fig. 1

Card 4, 4

S/057/62/032/007/004/013  
B104/B102

AUTHORS: Vdovin, V. L., and Nedospasov, A. V.

TITLE: Current instability of a positive column in a magnetic field

PERIODICAL: Zhurnal tekhnicheskoy fiziki, v. 32, no. 7, 1962, 817-822

TEXT: B. B. Kadomtsev and A. V. Nedospasov (J. Nucl. Energy, part C, Plasma Physica, 1, 230, 1960) showed that an instability of the form  $f(r)\exp(i(m\psi + kz - \omega t))$  was established in the positive column of a gas discharge subjected to a sufficiently strong, longitudinal magnetic field, and that an azimuthal electric field was generated. A particle drift toward the wall is observed. The critical pressures for the appearance of these instabilities when discharges occur in He, H<sub>2</sub>, Ne, Ar, Hg are calculated in the present paper on the basis of Nedospasov's theory and are compared with experimental data. It is shown that the instabilities discovered by F. C. Hoh and B. Lehnert (Report IIb, 25, on the Fourth Intern. Conf. on Ionisation Phenomena in Gases. Uppsala, 1959;

Card 1/2

Current instability of a positive ...

S/057/62/032/007/004/013  
B104/B102

Physics of Fluids, 3, no. 4, 600, 1960) can be described by the method here suggested. There are 6 figures.

DATE SUBMITTED: June 13, 1961

Card 2/2

ARTSIMOVICH, L.L.; NEDOSPASOV, A.V.

Radial distribution of a positive column of plasma in a magnetic field. Dokl.AN SSSR 145 no.5:1022-1024 '62. (MIRA 15:8)

1. Predstavleno akademikom M.A.Leontovichem.  
(Plasma (Ionized gases)) (Magnetic fields)

ACCESSION NR: AP4025926

S/0056/64/046/003/0926/0928

AUTHORS: Nedospasov, A. V.; Ponomarenko, Yu. B.

TITLE: Concerning the amplitude and form of strata

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 46, no. 3, 1964, 926-928

TOPIC TAGS: plasma, positive column, plasma strata, positive column strata, confined plasma, plasma equilibrium, growing plasma waves, stationary plasma waves, sinusoidal strata, relaxation strata, negative strata, critical point, critical surface

ABSTRACT: The range of plasma parameters in which strata of a positive column can exist is considered qualitatively and is represented by a closed surface in the space of the parameters  $R$ ,  $I$ , and  $p$  ( $R$  -- tube radius,  $I$  -- discharge current,  $p$  -- pressure). When any of the parameters passes through this boundary the plasma equilibrium

Card 1/2

ACCESSION NR: AP4025926

is disturbed and the interaction between the growing waves with different wave numbers results in stationary waves which constitute the strata. Conditions under which sinusoidal, relaxation, and negative strata are produced are analyzed from the point of view of the variations of the parameters on going through the critical points in various regions of the critical surface. The need for further experimental research is pointed out. "The authors are grateful to A. A. Vedenov and M. A. Leontovich for discussions." Orig. art. has: 2 figures and 4 formulas.

ASSOCIATION: Moskovskiy fiziko-tekhnicheskii institut (Moscow Physicotechnical Institute)

SUBMITTED: 01Aug63

DATE ACQ: 16Apr64

ENCL: 00

SUB CODE: PH

NO REF SOV: 006

OTHER: 007

Card 2/2



НИИ ФТД, Д.С.: С.А.М.С. НКС, Я.Б.

Stability of the equilibrium state of a positive column of  
discharge. Tekhn. fiz. vys. temp. 3 no.1:17-22 Ja-3 '65.

(MIR 1965)

.. Moskovskiy fiziko-tekhnicheskii Institut.

L 63616-65 INT(D)/REF(n)-2/ENG(m)/EP

ACCESSION NR: AP5010457

UR/0294/65/003/002/0186/0190  
533.932.15:537.312.8

AUTHORS: Nedospasov, A. V. (Moscow); Shipuk, I. Ia. (Moscow)

TITLE: Investigation of the conductivity of a plasma in a  
transverse magnetic field

SOURCE: Teplofizika vysokikh temperatur, v. 3, no. 2, 1965,  
186-190

TOPIC TAGS: plasma conductivity, plasma electron collision, plasma  
instability, Hall effect

ABSTRACT: The dependence of the effective conductivity of a plasma  
perpendicular to the direction of the induced electric field on the  
product of the Larmor frequency of the electrons by the average time  
between their collisions with the atoms (or), and the dependence of  
the Hall electric field on the same product, were measured by two  
independent methods. The experimental setup is illustrated in Fig. 1

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L 63016-65

ACCESSION NR: AP5010457

3

of the Enclosure. The value of  $\omega\tau$  was determined from the electron temperature, which was found to be independent of the magnetic field and equal to 0.5 eV within 20 per cent. The electric field intensities were measured with electrostatic probes at a floating potential. The relative change in the electron density was determined by measuring the ion current with a double probe. The experimental data were checked against calculations made by two independent methods and found to agree with theory. The results show that the effective conductivity perpendicular to the magnetic field decreases with increasing  $\omega\tau$  more rapidly than allowed for by the finite size of the sectionalized electrodes. The reason for this decrease is the value of the Hall field intensity, which becomes stationary with increasing  $\omega\tau$ . The conductivity decreases like  $(\omega\tau)^{-1}$  in the case of large  $\omega\tau$ . This is attributed to the occurrence of ionization instability. The authors thank Ye. P. Velikhov and A. M. Dykhe for useful discussions and N. Kosyreva for measuring the electron temperature. Original article has: 11 figures and 4 formulas.

Card: 2/4

L 63616-65

ACCESSION NR: AP5010457

ASSOCIATION: None

SUBMITTED: 19Sep64

ENCL: 01

SUB CODE: ME

NR REF SOV: 005

OTHER: 002

Card 3/4

L 69016-65

ACCESSION NR: AP5010457

ENCLOSURE: 01

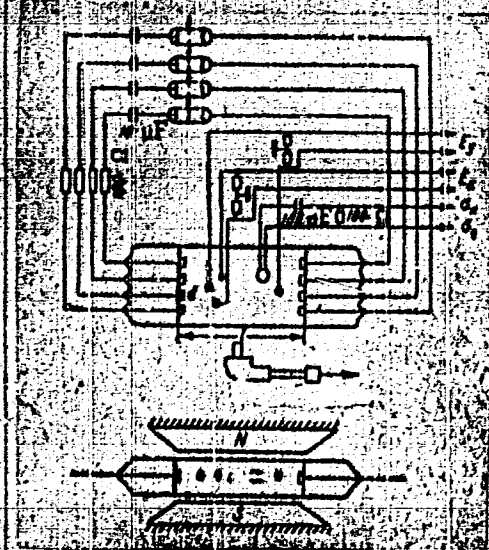


Fig. 1. Diagram of experimental set-up

Card 1/4

ACC NR: APG033409

SOURCE CODE: UR/0057/66/036/010/1758/1767

AUTHOR: Nedospasov, A.V.

ORG: none

TITLE: Helium discharge positive column in a strong magnetic field

SOURCE: Zhurnal tekhnicheskoy fiziki, v. 36, no. 10, 1966, 1758-1757

TOPIC TAGS: gas discharge plasma, helium plasma, plasma magnetic field, plasma instability, plasma oscillation, positive column, spectrum, correlation function

ABSTRACT: In order to investigate the transition of the positive column of a gas discharge in a magnetic field from the condition of current-convective instability that obtains at magnetic field strengths close to a critical value to the turbulent condition that prevails at much higher magnetic field strengths, the authors have recorded with probes the oscillations in the positive column of a hot cathode helium discharge in a 3.1 cm diameter 180 cm long tube in magnetic fields up to 6 kOe extending over 120 cm of the length of the discharge tube. Three 12 mm long 0.3 mm diameter molybdenum probes were mounted at different points on the axis of the discharge tube, and two similar probes were mounted at different distances from the axis opposite two of the axial probes. The spectra of the signals from the probes and the correlation functions of the signals from different pairs of probes were recorded. Twenty-six of the recorded spectra and correlation functions are presented graphically

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ACC NR: AP6033409

and are discussed at some length. Three types of oscillations were distinguished: current-convective oscillations with a discrete spectrum, which appeared as expected at the critical magnetic field strength and behaved in accordance with the theory; low frequency oscillations with frequencies of a few kilohertz associated with propagation of waves from the axis to the wall of the discharge tube, the propagation velocity being  $3 \times 10^5$  cm/sec at a magnetic field strength of 5.6 kOe; and oscillations with frequencies of several tens of kilohertz, which first appeared when the magnetic field was slightly inclined to the axis of the discharge tube and was of such a strength that the ion Larmor frequency was approximately equal to the ion collision frequency. Possible causes of the different oscillations are discussed. Orig. art. has: 2 formulas and 12 figures.

SUB CODE: 20

SUBM DATE: 17Sep65

ORIG. REF: 007 OTH REF: 005

Card 2/2

NEDOSPASOV, V.V.

Once more on Georg Forster. Bot. zhur. 45 no.4:617-618 Ap '60.  
(MIRA 14:5)

(Forster, Georg, 1754-1794)



NEDEKSTAYEV, M.N.

TABLE I SOME RESEARCHERS AND THEIR WORKS

Card 1/3

Statistical control systems in machine building; application of statistical control systems in machine building; application of the Statistical Control System in Machine Building; Plant Experience in Statistical Control of Production Quality and Analysis of Technological Processes; Moscow, Mashin, 1951. 128 p. 7,000 copies printed.

Author: A.G. Borzov, Engineer. Institute of the State Prize, and A.G. Muraviev, Candidate of Technical Sciences, Dr. S.I. Skripkin; Subj. M.: S.D. Popov; Moscow Mashin, 1950. 30 p. Subsequently, Institute and Organization of Production. S.D. Subsequently.

Notes: This book is intended for engineering and technical personnel and also forms in machine manufacturing establishments.

Comments: This collection of articles summarizes the work of plants under the control of the Ministerial Machinebuilding Industry (Mashinostroeniye) (Ministry for Machinery and Instrument Manufacturing) which lead to the introduction of statistical quality control Card 1/3

into the production process of engineering (machine) shops. These articles present data on the organizational and engineering measures necessary to introduce the methods of statistical control, the instrumentation of control operations, and the organization of work assignments among engineering and technical personnel. The efficiency of the latter is also discussed. There are no references in preliminary are mentioned.

TABLE OF CONTENTS

Skripkin, S.I., Engineer. Introduction of the Statistical Control of Analysis of Production into Plants of the Ministry for Machinery and Instrument Manufacturing	3
Orlov, S.V., Engineer. Statistical Control of an Instrument Manufacturing Plant	31
Bobrov, A.D. On the Use of Statistical Quality Control by the Machinebuilding Industry (Machinery and Instrument Manufacturing Plant)	59
Card 1/3	
Bobrov, A.D., Engineer, and S.V. Lavtosh, Engineer. Introduction of Statistical Quality Control of Production by the Publicly Machinebuilding Plant in Machine Building Engineering Plant (Mashinostroeniye) (Mashinostroeniye)	75
Bobrov, S.I., Engineer. The Use of Statistical Control by Machinebuilding Plants	101

STALIN: Library of Congress (93:25-035)

8/2/70

Card 1/3

1. MEDOSTUP, F. I.; ZBYGERMAKHER, G. A.
2. USSR 600
4. Mumps
7. Mumps, Pediatrics, No. 6, 1952. pp. 53-55  
"Concerning Epidemic Parotitis,"

The authors describe their observations on a group of patients with epidemic parotitis in an Odessa hospital. They state that, as a rule, this disease is more common among children of school age. In this instance, adults comprised 38.3% of all cases. The epidemic usually assumes max. proportions in March-May. Standard complications encountered have been meningitis in children and orchitis in male patients. The prognosis has been good in the majority of cases.

Chair of Infectious Diseases, Odessa Med. Inst.

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

STEPINA, N.G. [Stepina, N.H.]; NEDOSTUP, F.I.

Method for early mud treatment in pontine forms of poliomyelitis.  
Ped., akush. i gin. 22 no.3:13-15 '60. (MIRA 14:4)

1. Kafedra infektsionnykh detskikh bolezney (sav. - dotsent N.G. Stepina [N.H.Stepina]) Odesskogo meditsinskogo instituta im. M.I. Pirogova (direktor - zaslushennyy deyatel' nauki prof. I.Ya.Deyneka) i klinicheskoy infektsionnoy bol'nitsy (glavnyy vrach - L.T. Zhidovlenko).

(BATHS, MOOR AND MUD)

(POLIOMYELITIS)

STEPINA, M.G.; GONCHARUK, A.N.; NEDOSTUP, F.I.

Fangotherapy in poliomyelitis in children. Vop. kur., fizioter. i lech. fis. kult'. 30 no.3:268-269 My-Je '65.

(MIRA 18:12)

1. Kafedra infektsionnykh bolezney detskogo vozrasta (zav.- dotsent M.G. Stepina) Odesskogo meditsinskogo instituta i Odesskaya klinicheskaya infektsionnaya bol'nitsa (glavnyy vrach L.T. Zhidovlenko). Submitted June 20, 1963.

NEOSTUP, G.A.; PROKOP'YEV, P.N.; KHOLIN, A.I.; TSITOVICH, A.P.

Use of differential gamma spectrometry in petroleum geology.  
Prikl. geofiz. no.23:193-201 '59. (MIRA 13:1)  
(Oil well logging, Radiation)

NEDOSTUP, G.A.

Gamma ray scintillation spectrometer for the exploration  
of boreholes. Geofis. razved. no.12:120-127 '63.  
(MIRA 16:11)

L 40162-46 H(1)/ (m) 11 77  
ACC NR: AP6018910 (N) SOURCE CODE: UR/0170/66/010/006/0783/0788

AUTHOR: Nedostup, V. I.

ORG: Institute of Naval Engineers, Odessa (Institut inzhenerov morskogo flota)

TITLE: Method of correlation of the law of corresponding states for calculation of the thermodynamic properties of real gases and their mixtures

SOURCE: Inshenerno-fizicheskiy zhurnal, v. 10, no. 6, 1966, 783-788

TOPIC TAGS: real gas, thermodynamic property, correlation function

ABSTRACT: A method of correlation of the law of corresponding states has been described. The method permits one to use the similarity point and data on Boyle's curve to calculate the thermodynamic properties of gases and their mixtures with acceptable accuracy. The quantity  $\lambda$  is used as the parameter depending on the properties of the materials. The quantity  $\lambda$  is found from equation  $\lambda = b'(v_0^2 - v_0)$ . Orig. art. has: 5 formulas and 3 tables. [Based on author's abstract] [NT]

SUB CODE: 20/ SUBM DATE: 01Jun65/ ORIG REF: 003/ OTH REF: 008

Card 1/1'

UDC: 536.7

REF ID: A6029131  
SOURCE CODE: UR/0048/66/030/000/1050/1054

AUTHOR: Demnik, A.G.; Nodostup, V.M.; Lovin, G.I.

GROUP: none

TITLE: On the role played by vacancies and dislocated atoms in induced anisotropy  
Report, All-Union Conference on the Physics of Ferro- and Antiferromagnets held  
2-7 July 1966 in Sverdlovsk

SOURCE: AN USSR, Izvestiya. Seriya fizicheskaya, v. 30, no. 6, 1966, 1050-1054

TOPIC TAGS: ferromagnetic film, permalloy, magnetic anisotropy, annealing, lattice defect, kinetic theory

ABSTRACT: The authors have investigated the magnetic anisotropy of approximately 1000 Å thick permalloy films vacuum deposited at  $3 \times 10^{-5}$  mm Hg from a 17.5Fe-82.5Ni melt at about 40 Å/sec onto heated (20 to 200°) glass substrates and annealed at different temperatures and for different lengths of time in a 100 Oe field. Curves were plotted giving the magnetic anisotropy as a function of duration of anneal for films that were deposited on substrates maintained at a given temperature during deposition and were annealed at a (generally different) given temperature. Two of these curves are presented. The curves had different shapes, depending on the parameters (substrate and annealing temperatures): some rose monotonically with increasing annealing time toward a limiting value of the magnetic anisotropy, some fell monotonically, and

Card 1/2



L 08764-67

ACC NR: AP6029131

others (including the two presented in the paper) decreased to a minimum and then rose toward the initial value of the anisotropy. It is hypothesized that induced magnetic anisotropy is due mainly to the influence of lattice defects, and data in the literature are adduced in support of this hypothesis. A simple kinetic theory of the magnetic anneal of the films is developed on the assumption that the anisotropy is due to ordered chains of vacancies and that during the anneal the number of ordered vacancies can increase as a result of ordering of initially disordered vacancies and can decrease as a result of annihilation of vacancies with dislocated atoms. The results of this theory were compared with the experimental curves and good agreement was found; it is concluded that ordered vacancies are mainly responsible for the induced magnetic anisotropy in the investigated films. The activation energies for the ordering and annihilation processes were found to be 27 and 18.7 kilocal/gram-atom, respectively. The processes taking place during the anneal were found to take place least rapidly in the films that were deposited on 100° C substrates. The greater rapidity of the anneal processes in films deposited on colder substrates is ascribed to the effect of greater mechanical stresses in those films; the reason for the greater rapidity of the anneal processes in the films deposited on hotter substrates is not understood. The authors expect to investigate in the future the effects of impurities and film deposition rate on the kinetics of magnetic anisotropy induction. Orig. art. has: 9 formulas and 1 figure.

SUB CODE: 20

SUBM DATE: 00

ORIG. REF: 001

OTM REF: 006

Card 1/3 bc

NEPOSUGOV, A., p. 107-16

In the campaign for universal knowledge. In: ...  
30-31 April 1966.

NEDOSUGOV, L.

The young guard of petroleum chemists is growing. IUn.tekh. 7  
no.5:17-21 My '63. (MIRA 16:6)

1. Novogor'kovskiy neftepererabat/vayushchiy zavod.  
(Novogorki/--Petroleum refineries--Design and construction)  
(Communist Youth League)

**ENCLOSURE, H.M.**

Significance of health education in the eradication of tick-borne encephalitis. Med.paras. i paras.bol. 27 no.3:316-318 My-Je'58

(MIRA 11:7)

1. Is Gorkovskoy oblastnoy sanitarno-epidemiologicheskoy stantsii  
(ENCEPHALITIS, EPIDEMIC, prevention and control  
Russian tick-borne, health educt. (Rus))  
(HEALTH EDUCATION,  
in Russian tick-borne encephalitis prev. (Rus))

17(2,6)

SOV/18-89-1-11/47

**AUTHOR:** Nedosugov, N M.

**TITLE:** A Case of Tularemia Relapse Author's Summary

**PERIODICAL:** Zhurnal mikrobiologii, epidemiologii i immunobiologii, 1958,  
Nr 9, pp 129 (USSR)

**ABSTRACT:** This is the case history of a relapse into tularemia occurring  
2 years and 10 months after the initial attack.

**ASSOCIATION:** Gor'kovskaya oblastnaya sanitarno-epidemiologicheskaya stantsiya  
(Gor'kiy Oblast' Sanitary-Epidemiological Station)

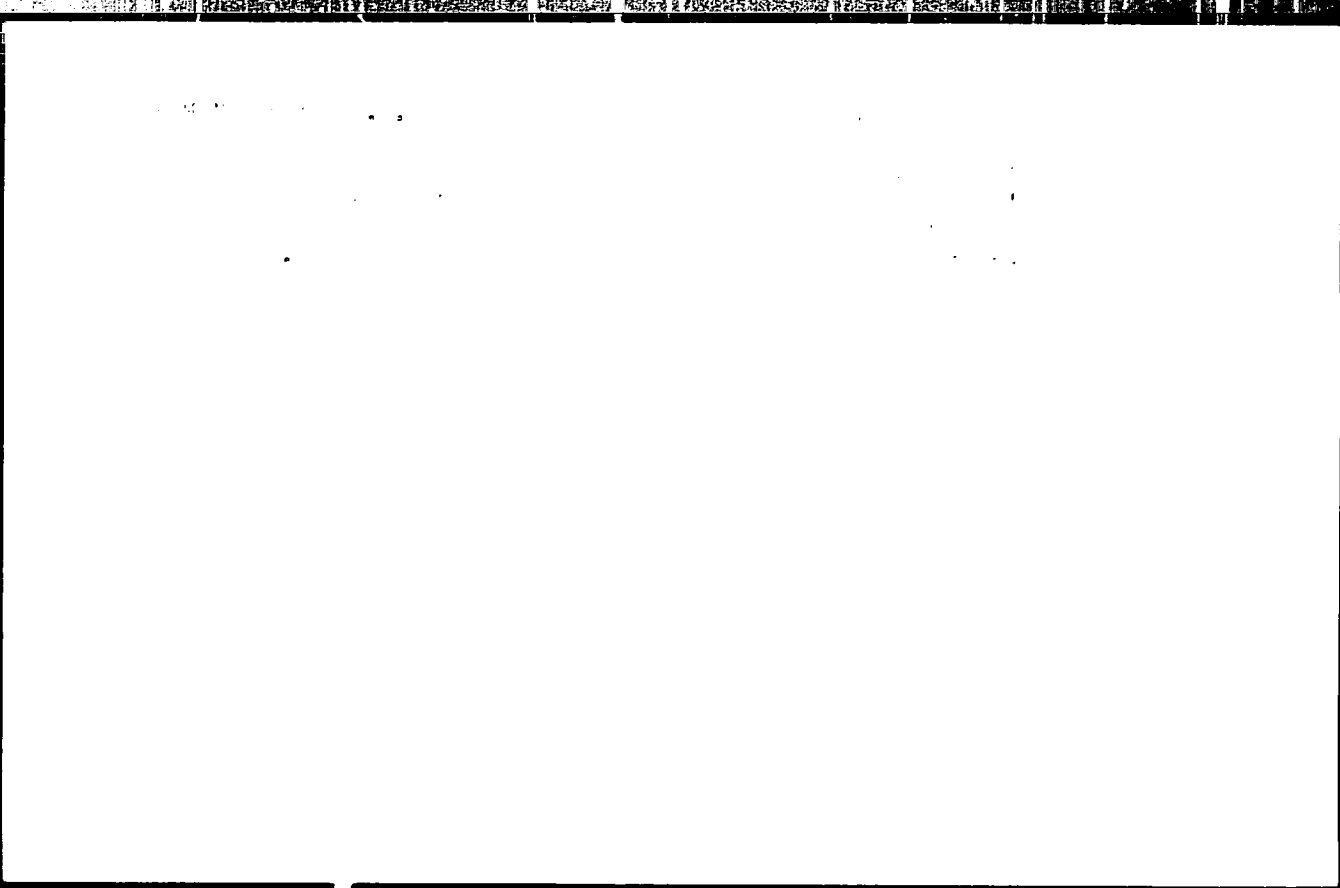
**SUBMITTED:** May 4, 1958

Card 1/1

ANTONOV, G.I.; KOSOGOLOV, V.V.; HELIOSVITIY, V.P.; VINOGRADOV, N.I.; KHIL'KO,  
M.M.; MOLECHANOVA, M.I.

New design of ribbed arches with reinforced supports. Metallurg  
9 no.2:18-21 F '64. (MIRA 17:3)

1. Ukrainskiy institut ogneuporov i Makeyevskiy metallurgicheskiy  
zavod.



VOROSHILOV, Yu.I.; NEDOTKO, P.A.

Use of mineral fuel and related changes in the natural environment.

Okhr. prir. i zapov. delo v SSSR no. 6:5-14 '60. (MIRA 14:5)

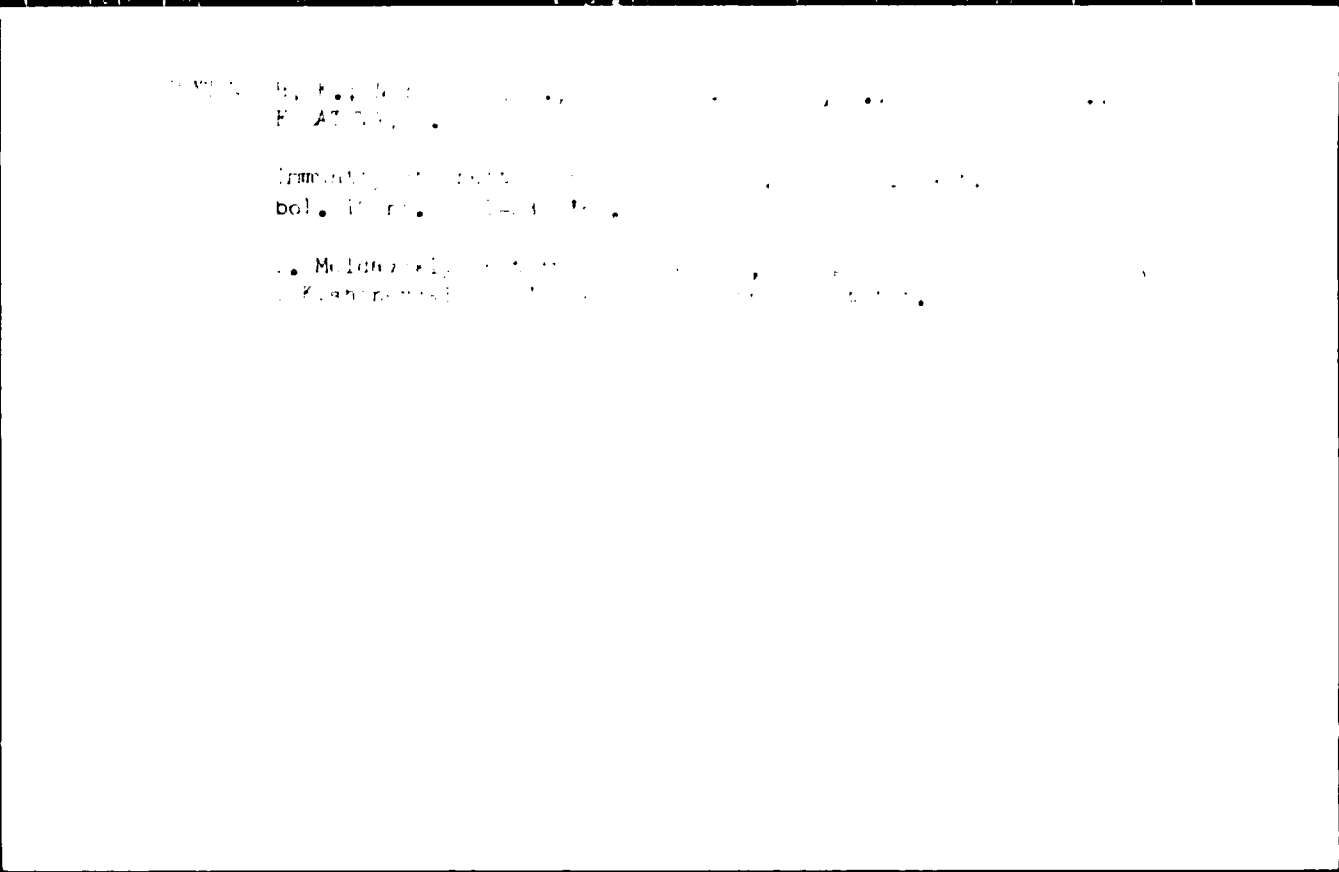
(Fly ash) (Atmosphere) (Geochemistry)



NEDOUROV, S., kand.voyennykh nauk, podpolkovnik intendantskoy sluzhby

Cadet becomes an officer. Tyl i snab. Sov. Voor. 311 21 no.11:  
35-37 N '61. (MIRA 1511)

(Russia—Armed forces--Officers)



NEDOVES, P. F.

Nedoves, P. P. -- "Automatic Regulation of Cutting Processes." Min Higher Education USSR, L'vov Polytechnic Inst, L'vov, 1955 (Dissertation for the Degree of Candidate in Technical Sciences)

SC: Knizhnaya Letopis', No. 23, Moscow, Jun 55, pp 87-104

S/112/59/006/014/033/1-4  
A052/A002

Translation from: Referativnyy zhurnal, Elektrotehnika, 1959, No. 45, p. 217  
# 34732

AUTHORS: Rabinovich, A. N., Nedoves, F. P.

TITLE: Automatic Control<sup>H</sup> of the Cutting Process

PERIODICAL: Nauchn. zap. L'vovsk. politekhn. in-t, 1958, No. 45, pp. 208-217

TEXT: Some automatic cutting speed control circuits for lathes are considered. An installation with an electric pickup which provides an automatic cutting speed control at a constant or slightly changing power consumption of the main motor at a given feed rate is investigated in detail. The power pickup consists of a 0.5-class astatic wattmeter with a paddle fixed on its hand. The paddle changes the network circuit inductance which determines the presence or absence of generation of the double driving oscillator on 15-20 Mc frequency and relays open or close contactors which control the reversible armature of the electric motor of the servomotor. The cutting process under automatic control conditions is considered. There are 4 illustrations.

Translator's note: This is the full translation of the original Russian text.  
Card 1/1

GAL'BINSHTEYN, Z.N., inzh.; UL'INA, N.F., inzh.; NAUMOVA, M.V., inzh.;  
FILINA, T.A., inzh.; KHODOS, M.M., inzh.; GOL'DMAN, Zh.I.;  
PATALAKH, V.G.; SNESAREV, M.M.; VUL'PSON, Ye.S., inzh.;  
KONSTANTINOVA, L.A., inzh.; SKOBELEVA, A.M., inzh.; TEL'NOVA,  
Ye.V., inzh.; KHEYFETS, L.S., inzh.; SELENEVICH, A.S.;  
NEDOVESENKO, M.V.; VOLKOVA, A.Ye.; NOVITSKIY, L.M., nauchn.red.;  
NEFEDOV, S.F., red.; MOSTOTSKIY, V.K., red.; GORDEYEV, P.A., red.  
izd-va; YUDINA, L.A., red.izd-va; VDOVENKO, Z.I., red.izd-va;  
GOL'BERG, T.M., tekhn.red.; KORDEKOVA, N.I., tekhn. red.

[Album of new construction equipment recommended for adoption]  
Al'bum novoi stroitel'noi tekhniki, rekomenduemoi k vnedreniiu.  
Moskva, Gosstroisdat, 1963. No.1. [Industrial construction] Pro-  
myshlennoe stroitel'stv. 116 p. No.3. [Construction for transporta-  
tion purposes] Transportnoe stroitel'stvo. 91 p. No.4. [Rural  
construction] Sel'skoe stroitel'stvo. 71 p. No.5. [Building  
materials, products, and elements] Stroitel'nye materialy, izde-  
liia i konstruktsii. 41 p. No.8. [Construction and road machinery  
and equipment] Stroitel'nye i dorozhnye mashiny i oborudovanie.  
104 p. (MIRA 16:8)

(Building materials) (Road machinery)  
(Construction equipment)

Medvedev, V.G.



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~~CONFIDENTIAL~~  
~~TOP SECRET~~

Radom Duet in V.G. Khlyun <sup>10/1</sup>  
Acad. Sci. USSR

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NE DOKUBAY, V. G.

19 pml

The  $\gamma$ -spectrum of antimony-124. A. B. S. Dzhelenty, N. N. Zhukovskii, V. G. Nedovskiy, A. P. Uchevatkin, and I. I. Chumlin (Leningrad Univ., Acad. Sci. U.S.S.R., Lenin-grad). *Nuclear Phys.*, 2, 408-10 (1958). — A new detn. of the  $\gamma$ -spectrum is reported based on data obtained with the electron, which is a  $\gamma$ -spectrometer with improved focusing in which recoil electrons are detected. The app. and method of calibration with Au<sup>198</sup>, Cs<sup>137</sup>, Zn<sup>65</sup>, Co<sup>60</sup>, Ni<sup>63</sup>, and Th C<sup>232</sup> are described. The  $\gamma$ -rays and relative intensities observed in the decay of 60-day Sb<sup>124</sup> are as follows: energy (e.kv.) and relative intensity; 600(28 ± 20), 211(20 ± 4), 725(37 ± 5), 967(5.0 ± 0.8), 1043(4.8 ± 1.3), 1233(4.5 ± 1.5), 1370(8.7 ± 1.2), 1443(2.8 ± 0.6), 1525(1.1 ± 0.7), 1700(100), and 2090(14.3 ± 1.5). The results are not assigned positively to Sb<sup>124</sup> because adequate radiochem. analysis was not done, but reinvestigation of the source 80 days later indicated that the spectrum in all regions decayed with a half-life of 60 days. Also in *Izv. Akad. Nauk S.S.S.R., Ser. Fiz* 20, 125-32(1955). R. W. Plink

3

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mji

NEDOVESKY, V. G.

3411  
 GAMMA-RAY SPECTRA OF  $Bb^{214}$ , B. S. Dzholepov, N. N. Zhukovskii, V. G. Nedovskoy, I. F. Ukhovskii, and V. G. Chumin. Izvest. Akad. Nauk S.S.S.R. Ser. Fiz. 20, 925-32 (1958) Aug. (in Russian)

Studies were made to determine the relative intensities of  $\gamma$  lines in the  $Bb^{214}$   $\gamma$  spectra. The investigations were carried out on the Electron  $\gamma$ -spectrometer with improved focusing using the electron recoil. The descriptions and design of the apparatus, the diagrams of measurements of the  $Bb^{214}$   $\gamma$  spectra and tabulations are presented. (R.V.J.)

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Nevedov, L. G.

48-7-8/21

AUTHORS: Dzheleпов, B.S., Zhukovskiy, N.N., Nedovesov, V.G., Shchekin, G.Ye.

TITLE: The  $\gamma$ -Radiation of Eu<sup>152,154</sup> ( $\gamma$ -izlucheniye Eu<sup>152,154</sup>),

PERIODICAL: Izvestiya Akad. Nauk SSSR, Ser. Fiz., 1957, Vol. 21, Nr 7, pp. 966 - 972 (USSR)

ABSTRACT: The  $\gamma$ -radiation of Eu<sup>152, 154</sup> was investigated by many scientists, but the complexity of the  $\gamma$ -spectrum and the great interest shown to the nucleus of Eu<sup>152</sup> induced the authors to repeat the investigation of the  $\gamma$ -spectrum of the isotope mixture of Eu<sup>152,154</sup> by means of an improved "electron". The conditions of this work are described. The form of lines and the graduation according to energies are shown on figure 1 and the experimental curve of the spectral sensitivity of the "electron" is shown on figure 2. The experimental curve of the  $\gamma$ -spectrum of Eu<sup>152,154</sup> is represented on figure 3. According to the taking into account of the dependence of the form of lines on the energy (figure 1) the  $\gamma$ -spectrum, after drawing off the basis, is decomposed into individual components. Figures 4 to 7 record such a decomposition for the sections  $H\gamma$  - 1400 to 2250, 2800 to 4000, 4000 to 5000 and 5000 to 6300  $\gamma$ cs. cm. The summary curve

Card 1/2

The  $\gamma$ -Radiation of Eu<sup>152</sup>, <sup>154</sup>

48-7-8/21

(the sum of the individual components represented by thin lines) on the whole agrees within the statistic limits with the experimental points. The obtained energy- $\gamma$ -lines and their relative intensities are given in table 1 together with the data of other authors. The difference in the intensities in certain domains is to be explained by inexact work of the "electron" under its old working conditions. The last works performed with the source of Eu<sup>154</sup> brought about a considerable clearing up of the isotope decay of Eu<sup>152</sup> and Eu<sup>154</sup>, but it was not yet possible to construct a final scheme of the decay of these isotopes. The values on the relative intensities of the  $\gamma$ -lines, which were obtained by the authors, together with the values obtained by other authors make it possible to determine the multifields of the  $\gamma$ -transitions (table 2). There are 2 tables, 7 figures and 48 references, 6 of which are Slavic.

ASSOCIATION: Radium Institute im. V.G. Khlopin, AN USSR (Radiyevyy institut imeni V.G.Khlopina Akademii nauk SSSR )

AVAILABLE: Library of Congress

Card 2/2

NETPOVESHU, U.S.

21 (7), 21 (8)

ABSTRACT:

SYNOPSIS:

PERIODICAL:

ABSTRACT:

Ludman, T. P.

1567 (8) 1978

II. Measurement of the rate of the reaction between the electron and the positive ion in the presence of a third body.

The II. The rate of the reaction between the electron and the positive ion in the presence of a third body. The rate of the reaction between the electron and the positive ion in the presence of a third body. The rate of the reaction between the electron and the positive ion in the presence of a third body.

Card 1/A

Card 1/B

7 (4), 7 (5), 21 (9)

AUTHORS: Dzheleпов, B. S., Ivanov, P. B.,  
Nedovesov, V. G., Chumin, V. G.

SOV/48-23-7-1/31

TITLE: Magnetic  $\alpha$ -Spectrometer (Magnitnyy  $\alpha$ -spektrometr)

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1959,  
Vol 23, Nr 7, pp 782-787 (USSR)

ABSTRACT: In the introduction of this paper, it is pointed out that most  $\alpha$ -spectrometers work with inhomogeneous magnetic fields, and that their resolving power is different (half-width of the lines 0.05 to 0.08 %) and their light intensity is low (aperture ratio 0.01 to 0.08 % of  $4\pi$ ). The purpose of the present paper is to develop an  $\alpha$ -spectrometer with a resolving power of 0.10 % at an aperture ratio of 0.3 % of  $4\pi$ . In the first part of the paper, the experimental arrangement (electromagnet with its screening and current supply, evacuation plant, accommodation of the radioactive sources, as well as the geometrical control of the  $\alpha$ -ray) is described in detail, and supplemented by figure 1 (pole shoes) and figure 2 (chamber). The second part deals with the measurement of the axial-symmetric magnetic field. The focusing angle is indicated with  $\pi\sqrt{2}$ , and three papers are mentioned showing that

Card 1/3

Magnetic  $\alpha$ -Spectrometer

SOV/48-23-7-1/31

spectrometers of this type have the most favorable relation between resolution and light intensity. For the axial component, an equation is given in which the coefficient  $\beta$  determines the focusing properties of the field. The influence of the magnitude of  $\beta$  on the width is discussed, and the measurement of the topography of the magnetic field by means of a rotatable coil is dealt with. These measurement results are shown in a diagram (Fig 3). Another diagram shows the topography of the magnetic field in dependence on the position of the screening rings on the pole shoes (Fig 4). The  $\alpha$ -particles are recorded by thick nuclear photoemulsions. The last part deals with the determination of the characteristic of the spectrometer. It was carried out with a  $Po^{210}$ -source, and the half-width of the lines amounted to 0.1 %. A variation of the solid angle did not show any influence, and the variation of the half-width of the line caused by a change in width and height of the source followed theoretical formulas of a previous paper (Ref 10). A diagram shows the dependence of the resolving power on the aperture ratio of the spectrograph (Fig 5). B. P. Shishin took part in the adjustment and calibration of the instrument. The

Card 2/3

Magnetic  $\alpha$ -Spectrometer

SOV/48-23-7-1/31

authors thank the collaborator K. I. Yakovlev for the ~~building of an~~  
~~instrument for the~~ measurement of the magnetic field by the method of proton  
resonance, D. M. Ziv and V. V. Fedorov for the preparation of  
the polonium sources, and also A. P. Zhdanov for his help in  
the preparation of the photoemulsions. There are 5 figures and  
10 references, 2 of which are Soviet.

ASSOCIATION: Radiyevyy institut im. V. G. Khlopina Akademii nauk SSSR  
(Radium Institute imeni V. G. Khlopin of the Academy of  
Sciences, USSR)

Card 3/3

7(4),7(5),24(7)

## AUTHORS:

Dshelepov, B. S., Ivanov, R. B.,  
Medovesov, V. G., Shishin, B. P.

SOV/48-23-7-2/31

## TITLE:

The  $\alpha$ -Spectrum of  $U^{233}$  ( $\alpha$ -spektr  $U^{233}$ )

## PERIODICAL:

Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1959,  
Vol 23, Nr 7, pp 788-791 (USSR)

## ABSTRACT:

The introduction mentions a paper by F. Asaro who detected three  $\alpha$ -groups of  $U^{233}$  by means of a magnetic  $\alpha$ -spectrometer of the sector type. In the following L. L. Gol'din et al. showed in an exact investigation of the  $\alpha$ -spectrum of  $U^{233}$  that it is composed of five lines. These lines are indicated, and it is ascertained that the last three of these lines cannot be calculated by the known formulas for the intensity of the  $\alpha$ -transitions. In 1958, the authors carried out investigations of the  $\alpha$ -spectrum of  $U^{233}$  by means of the  $\alpha$ -spectrometer described in the first paper of this issue; these investigations permitted a more accurate determination of the intensity of these three weak lines. Electrochemically plated  $U^{233}$  on platinum was used as a source. The measured

Card 1/2

The  $\alpha$ -Spectrum of  $U^{233}$ 

SOV/48-23-7-2/31

values are compiled in two diagrams (Figs 1 and 2); tables 1 and 2 compare the values with those obtained by other authors. The results show that if there is an  $\alpha_4$ -line this is very weak. The  $\alpha_5$ -line is formed by a transition to the 316 keV level, and its intensity shows that this is a transition of a single-particle excited level. The quantum numbers of these transitions are dealt with in detail, and finally a scheme of the decay of  $U^{233}$  and of the levels  $Th^{229}$  is given (Fig 3). The authors thank Yu. T. Pusynovich and V. N. Delayev for their help in the measurements, and L. K. Peker for the discussion of the results of their work. There are 3 figures, 2 tables, and 9 references, 6 of which are Soviet.

ASSOCIATION: Radiyevyy institut im. V. G. Khlopina Akademii nauk SSSR  
(Radium Institute imeni V. G. Khlopin of the Academy of Sciences, USSR)

Card 2/2



24.6520  
24.6800

S/048/60/024/03/01/019  
B006/B014

AUTHORS: Dzhelepov, B. S., Ivanov, R. B., Nedovesov, V. G.,  
Fuzynovich, Yu. T.

TITLE: Alpha Emission of U<sup>233</sup>

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1960,  
Vol. 24, No. 3, pp. 258-260

TEXT: The article under review was read at the Tenth All-Union Conference on Nuclear Spectroscopy (Moscow, January 19 - 27, 1960). The alpha emission of U<sup>233</sup> was measured in 6 series by means of an  $\alpha$ -spectrometer (two different U<sup>233</sup> sources). A brief description of results is given. The spectral region between 4.7 and 4.8 Mev (first series) is illustrated in Fig. 1, the region between 4.6 and 4.75 Mev (fifth series) in Fig. 2, and that between 4.4 and 4.7 Mev (sixth series) in Fig. 3. In addition to the known lines, transitions at 29, 72, 126, and 195 keV were detected. Besides, a particularly indistinct peak was found at 145 keV (intensity  $\leq 0.01$  per cent). All results are summarized in a table.

Card 1/3

Alpha Emission of  $U^{233}$

S/048/60/024/01/01/01  
B006/BC14

energy of the $Th^{229}$ level [keV]	intensity of $\alpha$ -transitions %	characteristics of the $Th^{229}$ level			prohibition F
		K	I	$\pi$	
0	83	5/2	5/2	+	1.9
29±2	0.48±0.08	5/2	5/2	-	200
42.3	14.6	5/2	7/2	+	5.8
72±2	0.28±0.06	5/2	7/2	-	190
97	1.5	5/2	9/2	+	24
126±2	0.08±0.02	5/2	9/2	-	280
(145±5)	≤ 0.01	-	7/2	(-)	~1700
163±2	0.06±0.02	5/2	11/2	+	200
195±3	0.015±0.05	5/2	11/2	-	500
(240±5)	≤ 0.004	(5/2)	(13/2)	(+)	~1200
316±2	0.033±0.006	-	(3/2)	(+)	30
(364±5)	≤ 0.004	-	(5/2)	(+)	130

The level scheme of the decay  $U^{233} \rightarrow Th^{229}$  is shown in Fig. 4. The authors thank L. L. Goldin and G. I. Novikova for supplying the  $U^{233}$ .

Card 2/3

Alpha Emission of U<sup>233</sup>

S/048/60/024/03/01/010  
B006/R01A

source, L. K. Peker for his discussions, V. A. Belyakov and V. N. Delayev for their assistance. There are 4 figures, 1 table, and 3 references, 2 of which are Soviet.

ASSOCIATION: Radiyevyy institut im V G Khlopina Akademii nauk SSSR  
(Radium Institute imeni V. G. Khlopina of the Academy of  
Sciences, USSR) ✓

Card 3/3

31767  
S/056/61/041/006/006/054  
B108/B138

246210

AUTHORS: Dzheleпов, B. S., Ivanov, P. B., Nedovesov, V. G.

TITLE: Alpha-decay of Pu<sup>239</sup>

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 41,  
no. 6(12), 1961, 1725-1728

TEXT: The authors studied the  $\alpha$ -spectrum of Pu<sup>239</sup> by means of a double-focusing magnetic  $\alpha$ -spectrometer. Besides the wellknown  $\alpha$ -lines, lines corresponding to transitions to the levels 104, 198, 224, 299, and possibly 243 keV have been detected. The measurements are given in Table 2. A decay scheme is suggested for Pu<sup>239</sup> (Fig. 2). The authors thank L. L. Gol'din, G. I. Novikova, V. A. Belyakov, and V. N. Delayev for their help. There are 2 figures, 2 tables, and 9 references: 5 Soviet and 4 non-Soviet. The three references to English-language publications read as follows: D. Strominger et al. Table of Isotopes, UCRL, 1928, 1958; F. Asaro, I. Perlman. Phys. Rev., 88, 828, 1952; J. O. Newton. Nucl. Phys., 2, 345, 1957; 2, 218, 1958.

Card 1/1

Alpha-decay of Pu<sup>239</sup>

32707  
S/056/61/041/006/006/054  
B108/B138

ASSOCIATION: Radiyevyy institut Akademii nauk SSSR (Radium Institute of the Academy of Sciences USSR)

SUBMITTED: June 12, 1961

Legend to Table 2: (1) number of the line, (2) level energy, kev, (3) transition intensity, per cent, (4) forbiddenness factor, (5) transition from Pu<sup>240</sup> impurities to the 4<sup>+</sup> level of U<sup>236</sup>, (6) impurity U<sup>233</sup>.

№ линии	Энергия уровня, keV	Интенсивность перехода, %	Коэффициент запрета
α <sub>0</sub>	1	72	1,7
α <sub>1</sub>	13	17	0,1
α <sub>2</sub>	51	11	5,7
α <sub>3</sub>	84	0,038	950
α <sub>4</sub>	104	0,030	1030
α <sub>5</sub>	5 переход Pu <sup>240</sup> на уровень 4 <sup>+</sup> ядра U <sup>236</sup>		
α <sub>6</sub>	150	0,018	800
α <sub>7</sub>	170	0,008	1200
α <sub>8</sub>	198	0,008	860
α <sub>9</sub>	224	0,008	580
α <sub>10</sub>	243?	~0,003	~1200
α <sub>11</sub>	299	0,004	360
α <sub>12</sub>	6 примесь U <sup>233</sup> (основной переход)		
α <sub>13</sub>	424	0,007	30

Card 2/0

L0092

S/048/62/026/008/002/028  
B102/B108

26 2541  
AUTHORS: Ivanov, R. B., Krivokhatskiy, A. S., and Nedovesov, V. G.  
TITLE: Measurement of the alpha particle energies of some curium isotopes  
PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya, v. 26, no. 8, 1962, 976-978

TEXT: The alpha transition energies of Cm<sup>242,243,244</sup> were determined by means of photographic emulsion plates. In four series of measurements the plates were exposed to the Cm alpha particles as well as to a Bi<sup>212</sup> source, whose alpha decay energies are known exactly. The magnetic field strength was kept constant with an accuracy of 0.01%. The following mean alpha-transition energies (kev) were obtained:

$$\text{Cm}^{242}: E_{\alpha_0} = 6115 \pm 1 \quad E_{\alpha_1} = 6071 \pm 1$$

$$\text{Cm}^{244}: E_{\alpha_0} = 5806 \pm 2 \quad E_{\alpha_1} = 5763 \pm 2$$

Card 1/2

Measurement of the alpha ...

s/048/62/026/008/002/028  
B102/B108

$^{243}\text{Cm}$ : three groups with  $E_\alpha = 5991 \pm 3, 5784 \pm 3, 5739 \pm 3$ . These values are somewhat higher than those obtained by other authors (Strominger et al. Tables of Isotopes UCRL-1928. April 1958). There are 2 figures and 3 tables.

Card 2/2

BELOV, L.M.; DZHELEPOV, B.S.; IVANOV, R.B.; KRIVOKHATSKIY, A.S.;  
NEDOVESOV, V.G.; CHECHEV, V.P.

α -Decay of Cm<sup>245</sup> and Cm<sup>246</sup>. Radiokhimiya 5 no.3:394-  
395 '63. (MIRA 16:10)

(Curium isotopes—Decay)



IVANOV, R.B.; KRIVOKHATSKIY, A.S.; KRIZHANSKIY, L.M.; NEDOVESOV, V.G.;  
YAKUNIN, M.I.

Determining ( $T_{1/2}$ )  $Pu^{241}$  half-life period. Atom. energ. 15 no.4:  
322-323 0 '63. (MIRA 1:10)

DZHELEPOV, B.S.; IVANOV, R.B.; NEDOVESOV, V.G.; CHECHEV, V.P.

$\alpha$ -Decay of curium isotopes. Zhur. eksp. i teor. fiz. 45  
no.5:1360-1371 N '63. (MIRA 17:1)

BARANOV, I. A.; IVANOV, R. B.; KRIVOKHATSKIY, A. S.; NEDOVESOV, V. G.; SILANT'YEV, A. N. ,

"Gamma Radiations of Cm<sup>242</sup> and Cm<sup>243</sup>."

report submitted for All-Union Conf on Nuclear Spectroscopy, Tbilisi, 14-22  
Feb 64.

Radiyevyy Institut (Radium Inst)

ACCESSION NR: AP4037560

S/0056/64/046/005/1517/1524

AUTHORS: Dzhelepov, B. S.; Ivanov, R. B.; Medvedev, V. G.

TITLE: Alpha decay of Pu-241

SOURCE: Zh. eksper. i teor. fiz., v. 46, no. 5, 1964, 1517-1524

TOPIC TAGS: plutonium, Alpha decay, Alpha particle spectroscopy, level transition, decay scheme,

ABSTRACT: The  $\alpha$  spectrum of Pu<sup>241</sup> was investigated with a magnetic  $\alpha$  spectrometer with beam focusing at an angle  $\pi/2$ . The measurement procedure was similar to that used for curium earlier (ZhETF v. 45, 1360, 1963). The data obtained on the relative intensities of the  $\alpha$  transitions in each plutonium isotope (table 1), together with resolution of some of the lines, yield 3 level schemes for the  $\alpha$  decay of Pu<sup>241</sup> and Cm<sup>243</sup>. Several arguments are advanced against one of the

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ACCESSION NR: AP4037560

levels (level a) and in favor of the other (level b). Orig. art.  
has: 3 figures and 2 tables.

ASSOCIATION: None

SUBMITTED: 22Jun63

DATE ACQ: 09Jun64

ENCL: 02

SUB CODE: NP

NR REF SOV: 003

OTHER: 010

Card 2/4

ACCESSION NR: AP4037560

ENCLOSURE: 01

Tabulated experimental results

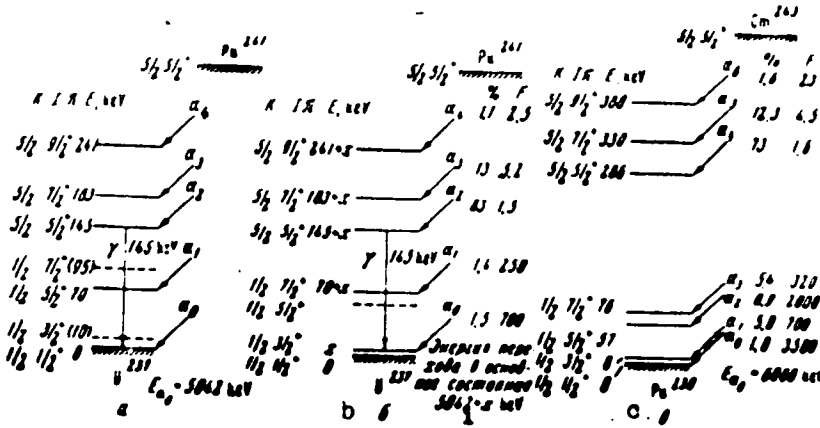
1 № линии	2 Изотоп плутония, которому принадлежит α-переход	3 Табличные значения ("")		5 Наше данные	
		3 E <sub>α</sub> , keV	4 относительная интенсивность в данном изото- пе, %	E <sub>α</sub> , keV	относительная интенсивность в данном изото- пе, %
1	Pu <sup>241</sup>	-	-	5042 ± 4	1.5 ± 0.5
2	Pu <sup>240</sup>	5020	0.1	5020	0.1
3	Pu <sup>241</sup>	-	-	4973 ± 4	1.4 ± 0.3
4	Pu <sup>240</sup>	4908	76	4904 ± 3	75 ± 2
5	Pu <sup>241</sup>	4893	75	4899 ± 4	83 ± 8
6	Pu <sup>241</sup>	4848	25	4862 ± 4	13 ± 3
7	Pu <sup>240</sup>	4853	24	4850 ± 3	25 ± 2
8	Pu <sup>241</sup>	-	-	4805 ± 4	1.1 ± 0.3

1 - line number, 2 - isotope to which the alpha transition is assigned, 3 - tabulated values, 4 - relative intensity in the given isotope, per cent, 5 - our data

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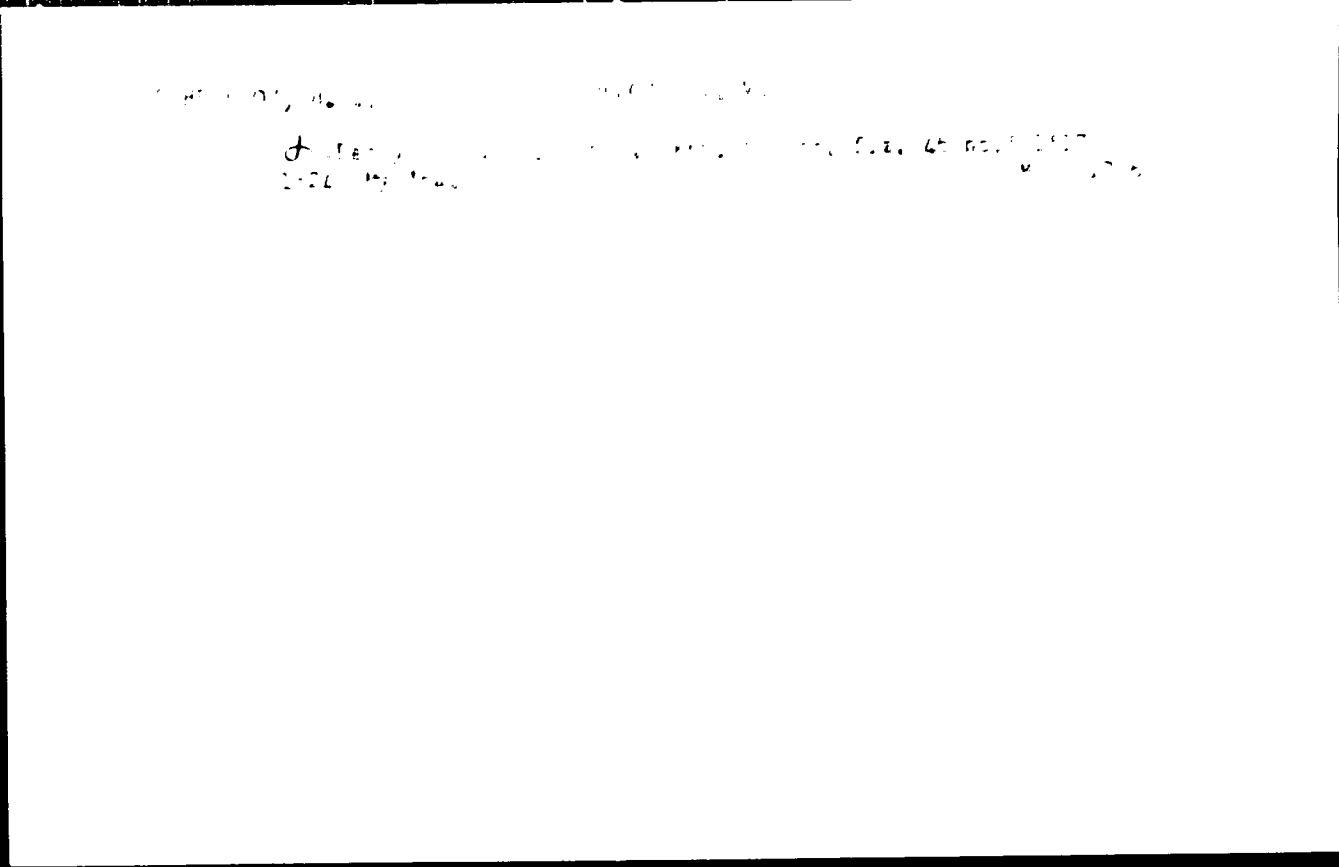
ACCESSION NR: AP4037560

ENCLOSURE: 02



Variants of alpha-decay schemes of Pu<sup>241</sup> (a and b) and of Cm<sup>243</sup>(c).  
1 - Energy of transition to ground state 5042 + x keV

Card 4/4





KOMAROVA, Mariya Kuz'mina; MEL'NIKOVA, Viktor Ivanovich;  
ZELENETSKAYA, ...

Controlling the loss of seeds grain; ...  
zernovykh ...  
83 p. (1984)

1896h-65 EWT(d)/EWT(1)/EPA(s)-2/EEC(k)-2/EEC-l/EEC(t)/EEC(b)-2/EWA(h) Po-l/  
 Pq-l/Pg-l/Pt-10/Pk-l/Pl-l/Peb IJP(c)/SSD/RFETR/RAEM(a)/AS(mp)-2/AFWL/ASD(a)-5/  
 AEDC(b)/RAEM(c)/ESD(gs)/ESD(t)  
 ACCESSION NR: AR5000811 8/0058/64/000/010/H033/H033

SOURCE: Ref. zh. Fizika. Abs. 10Zh229

AUTHORS: Koshkin, L. I.; Kurushin, Ye. P.; Shcheglov, O. S.;  
Nedovesov, V. N.

TITLE: Contribution to the calculation and investigation of elec-  
 tromagnetic fields in waveguides with ferrodielectric inserts

CITED SOURCE: Uch. zap. Kuybyshevsk. gos. ped. in-t., vyp. 42,  
 1964, 75-80

TOPIC TAGS: ferrodielectric, ferrite insert, waveguide measure-  
ment, electromagnetic field, electric loss

TRANSLATION: An experimental method is proposed for finding the  
 field configuration in waveguides with ferrite inserts of arbitrary  
 form. It consists of introducing into the waveguide a probe with

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L 18964-65

ACCESSION NR: AR5000811

0

appreciable losses. Motion of the probe causes the transfer coefficient of the waveguide to vary in proportion to the square of the tangential component of the field at the location of the probe. Results of tests of this method in waveguide with known field distribution are presented, and it is noted that the accuracy of the method is high. A diagram is proposed of an installation for exact measurement of low losses. G. Postnov.

SUB CODE: EC, EM

ENCL: 00

Card 2/2

L 62258-65 BT(1)/KDC-4/MA(h)  
ACCESSION NO: AR9004626

8/0274/64/001/011/0068/0068  
621.597.34

3  
33  
B

SOURCE: Ref. zh. Radiotekhn. i elektronika. Sv. t., Abs. 114575

AUTHOR: Kozhina, L. I.; Kurshina, Ye. P.; Shchegolev, O. S.; Bolovynov, V. B.

TITLE: Calculation and investigation of electromagnetic fields in the ferrite-dielectric-loaded waveguides

CITED SOURCE: Sch. zap. Vyssheshch. gos. ped. in-t, vyp. 42, 1964, 75-80

TOPIC TAGS: waveguide, ferrite loaded waveguide 15

TRANSLATION: An experimental method is suggested for finding the field configuration in the waveguides with ferrite slabs of arbitrary shapes. A lossy probe is introduced in the waveguide; the probe movement causes a variation in the waveguide transfer ratio proportional to the square of the tangential field component at the point of location of the probe. The probe shape and size depend on the mode. Results are cited of a verification of the method on the waveguides with a known field distribution; high accuracy is noted. An outfit for accurate measurement of low losses is described. Bibliography: 5 titles.

Card 1/1 SUB COMM. NO. ENCL. 00

SOV/ 49-58-12-6/17

**AUTHORS:** Kondrat'yev, K. Ya. and Nedovesova L. I.

**TITLE:** On the Thermal Radiation of Carbon Dioxide in the Atmosphere  
(O teplovom izluchenii uglekislogo gaza v atmosfere)

**PERIODICAL:** Izvestiya akademii nauk SSSR, Seriya geofizicheskaya  
1958, Nr 12, pp 1470-1476 (USSR)

**ABSTRACT:** It was noticed that the carbon dioxide gas shows the intensive absorption band in the infra red end of the spectrum and therefore the thermal radiation of this gas represents a significant factor in the general radiation of the atmosphere. The purpose of this work is to determine the transmission function of the atmosphere at the 15  $\mu$  band of the spectrum and to apply this function for the determination of the relationship of the thermal radiation of the carbon dioxide and its concentration. The band 15  $\mu$  is the only one which takes a part in transfer of thermal radiation. The determination methods of the absorption in this band were investigated by various authors; some of the results are given in Fig.1, where the relation of the absorption to the quantity of CO<sub>2</sub> is shown. A function (1) can be derived for

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SOV/ 49-58-10-6/17

## On the Thermal Radiation of Carbon Dioxide in the Atmosphere

these results. However, the formula (2) could be applied in the general case, where  $(P_J)$  and  $(P_F)$  are the transmission functions for the direct and diffuse radiation respectively ( $\theta$  - angle of zenith). It is possible to determine the value  $P_F$  for every  $u$  but the author considers that a better method could be applied based on Eq.(3) where the diffusion coefficient  $\beta$  could be considered as equal to 1.80 for the large values of  $u$ . For the small  $u$  (ranging from  $10^{-2}$  to  $10^{-3}$  cm), the value of  $\beta$  becomes variable. Therefore the calculations could be based on Eq.(2) for the exact value of  $P_F$  and on Eq.(3) for its intermediate values. The result of the calculation is shown in Table 1. Eq.(4) can be applied for the calculation of the coefficient of absorption of water vapour in the band of the spectrum 12 - 18  $\mu$  (Ref 7). In order to deduce the coefficient for the  $CO_2$ , the relationship (5) can be applied. Thus the transmission function for the mixture of  $CO_2$  and  $H_2O$  in the band 15  $\mu$  can be found (an example is shown in Table 1). The values of  $u$  related to both gases can be determined from the formulas (6) and (7). It can be estimated that the

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307/ 49-58-12-6/17

On the Thermal Radiation of Carbon Dioxide in the Atmosphere

coefficient defining the percentage of the thermal radiation  $\sigma T^4$  for the  $15 \mu$  band of the spectrum is equal to  $K_1 = 0.264$

Therefore the total thermal radiation of the atmosphere for this band can be calculated. The results of this calculation are shown in Table 2 for 2 stratifications I - near the earth surface and, II - free atmosphere. There are 2 tables, 1 figure and 7 references; 3 of the references are Soviet, 3 are English and 1 is Czech.

ASSOCIATION: Leningradskiy gosudarstvennyy universitet im. A. A. Zhdanova (Leningrad State University, im. A. A. Zhdanov)

SUBMITTED: October 18, 1957.

Card 3/3

NEDOVIZIN, A.A.

Stratigraphy of the Akzhal series in the Chu-Ili Mountains.  
Izv. AN Kazakh. SSR. Ser. geol. no.2:26-34 '61. (MIRA 14:7)  
(Chu-Ili Mountains--Geology, Stratigraphic)



WEDVEDIY , . . .

"Insect Pests of the Vegetable Crops in Southern Region of  
Sverdlovsk Oblast." Izd. Biol. Sci., Moscow, 1955.  
(RZNB: 1, № 1, Ser. 54)

SO: Sur 432, 20 Mar 55

VEDOVIZIY, I.N.; BASS, A.I., redaktor; STAROLUR'SEVA, S.M., redaktor;  
WILKAYLOVA, V.V., tekhnicheskiy redaktor

[Rapid drawing of low-carbon steel wire] Skorostnoe volochenie  
niskouglerodistoi stal'noi provoloki. Moskva, Gos. nauchno-tekhn.  
isd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1954. 128 p.  
(Wire) (MLRA 7:8)

NEDOVIZIY, I.N.

✓ Pickling Baths of Murchalite. I. N. Nedovizil and A. L. Tarnavskii. (Sov. 1965, (4), 259-261). [In Russian]. The use of murchalite for the construction of pickling baths of 1500 x 2100 mm. Internal dimensions is described. Reinforcement of the walls was used to pre-stress the structure and several years of service were obtained from the bath by avoidance of sudden changes of temperature; using an upper working temperature under 25°C.; and preventing direct contact of water and steam with the walls. (The solution is not made up by adding acid to water in the bath). The use of murchalite baths is said to have led to increased productivity and decreased acid consumption. — S. E. [unclear]

*Magnitogorsk Plant, im. Krepse*  
*Magnitogorsk Mining Metallurgical Ind.*

11 1506 12 12 11

**AUTHOR:** Nedoviziy, I.N., Engineer.

134-1-20/23

**TITLE:** Slott d Screens for Ore Beneficiation (Shchnelevinyye sita dlya bogashcheniya rud)

**PERIODICAL:** Stal', 1957, No.9, pp. 850 - 854 (USSR)

**ABSTRACT:** The design of slotted sieves and the choice of dimensions of working rods are discussed and the technology of their production is described. It is concluded that due to a large sieving area and high strength, as well as lack of tendency to blocking and a large wear tolerance, slotted sieves possess many operational advantages: large throughput, long service life and minimum losses of beneficiation products into slurries. The existing design and materials of construction of the sieves are not considered to be rational; stamped rods should be replaced by rolled ones and brass by carbon steel with increased anti-corrosive properties or stainless steel. There are 2 tables and 5 figures.

**ASSOCIATION:** Scientific Research Institute of the Wire Industry. (N.-I Institut Metiznoy Promyshlennosti)

**AVAILABLE:** Library of Congress.

Card 1/1



ESTIMATION OF ...

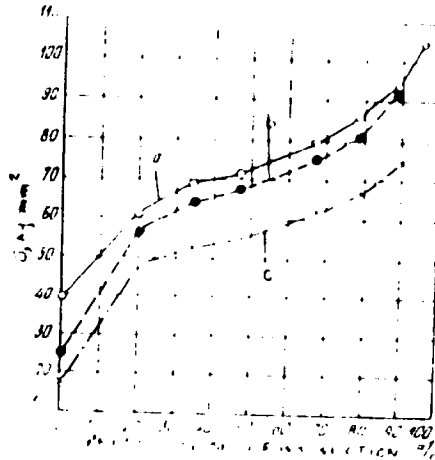


Fig. 1. The effect of ...  
 drawing ...  
 information ...  
 steel wire ...  
 (see ... and ...).

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Efficiency of Using Cold-Drawn Wire

717  
307, 195-40-3-21 100

drawing, and results in 55-58% economy of metal.  
(4) The cost of one linear meter of 4-mm diameter  
finished wire is 50% lower than 1 meter of  
6.5-mm diameter rolled rod. There are 4 figures.

ASSOCIATION: Scientific Research Institute of Hardware Industry  
(Nauchno-issledovatel'skiy institut metiznoy  
promyshlennosti)

Card 3/3

1125

38777  
S 7137/52/000/06/083/163  
A152-111

AUTHOR: Nedoviziy, I. N.

TITLE: Experiments on high-speed drawing of steel wire

PERIODICAL: Referativnyy zhurnal, Metal Induzh, 1971, No. 1, abstract 2119  
(Tr. Konferentsii po metallizatsii, 1971, M., Volgynskaya, 1971, 28 - 36)

TEXT: The drawing of thin low-carbon wire at speeds of 1000-15000 rpm is not only possible but also desirable, in order to increase the efficiency of drawing mills and to cut the power consumption. The measurement of the draw plate temperature by the electric analogy method is more reliable and accurate than the methods applied previously. The application of diamond draw plates when drawing 0.2 - 0.5 mm wire at high speeds (over 10000 rpm) is efficient and can be recommended for industrial use.

N. Yuzina

[Abstracter's note: Complete translation]

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NEDOVIZIY, I.N., inzh.; GEL'FAND, I.M., inzh.; AL'TER, V.F., inzh.

Using an electric model for temperature determination in the center of deformation during drawing. Stal' 21 no.6:567-570  
Je '61. (MIRA 14:5)

1. Nauchno-issledovatel'skiy institut metiznoy promyshlennosti.  
(Drawing (Metalwork)--Electromechanical analogies)

L 26096-66 EEC(k)-2/EWA(h)/EWI(1)

ACC NR: AP6013505

SOURCE CODE: UR/0126/86/000/002/0093/0095

AUTHOR: Dubin, I. I.; Kostikov, V. I.; Makalov, V. I.; Medvedev, E. V. 56

ORG: Leningrad Polytechnical Institute (Leningradskiy politekhnicheskiy institut) B

TITLE: An automatic magnetic field calibrator for electron paramagnetic resonance microwave spectrometers

SOURCE: Pribery i tekhnika eksperimenta, no. 2, 1966, 93-95

TOPIC TAGS: EPR spectrometer, microwave spectroscopy, magnetometer, phase detector

ABSTRACT: A circuit is given for an instrument which automatically calibrates the magnetic field for electron paramagnetic resonance spectrometers. One of the main advantages of the circuit is that it may be assembled from standard components which are available in chemistry and physics laboratories engaged in electron paramagnetic resonance research. The device is conditionally divided into two functional units: 1. a system for automatically tracking the change in the magnetic field of the spectrometer; 2. a circuit for generating the field pulse. The basic element in the first section is a standard IMI-2 magnetometer. The nuclear resonance signal from the phase detector of the magnetometer is fed to the input of a UE-119 amplifier. The output voltage from the amplifier is the supply for a reversible EP-09 motor with a 1/15.62 speed reducer. The motor shaft is connected through a clutch to the vernier shaft of

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UBC: 539.26.078

L 26096-66

ACC NR: AP6013505

0

a capacitor for variation of the oscillator frequency in the INI-2. During scanning of the magnetic field, an error signal appears at the output of the phase detector in the magnetometer. After amplification, this signal causes the motor to change the oscillator frequency in the magnetometer so that resonance conditions are maintained. The basic element in the field pip generating circuit is a 526U heterodyne wavemeter. The voltage from the oscillator in the INI-2 is fed to an 8V1-3 vacuum-tube millivoltmeter. The amplified voltage then goes to the input of the 526U wavemeter where the oscillator frequency is mixed with the heterodyne frequency. The best signals, which result when the oscillator frequency is a multiple of the heterodyne frequency, are the magnetic field pips. After amplification and detection in a 291N low-frequency amplifier, these pips are recorded together with the electron paramagnetic resonance spectrum on the microwave spectrometer chart... The intervals between pips may be varied within a range of 30 to 60 e-scans. Fields of 1400-3000 e-scans may be calibrated. The relative error in calibration is  $3 \cdot 10^{-6}$  or less. Alignment and operating procedure are described as well as some characteristics of the device. Some possibilities for improvement of the circuit are discussed. Orig. art. has: 2 figures.

SUB CODE: 00/ SUBM DATE: 09MAR65/ ORIG REF: 004/ OTN REF: 001. (14)

ATD PRESS: 4254

Card 2/2 ll

L 13859-66 ENT(1)/FCC GW  
ACC NR: AT6004293 (N)

SOURCE CODE: UR/3175/65/000/026/0026/0028

AUTHOR: Medvedevy, G. P.; Prakhov, V. M.

ORG: none

TITLE: Conditions for maximum sensitivity of a magnetometer based on optical orientation of atoms

SOURCE: USSR. Gosudarstvennyy geologicheskiy komitet. Osoboye konstruktorskoye byuro. Geofizicheskaya apparatura, no. 26, 1965, 26-28

TOPIC TAGS: magnetometer, optic property, Zeeman effect, magnetic field measurement, etc.

ABSTRACT: Magnetometers are presently being developed which are based on optical orientation of atoms. Magnetic resonance in the instruments, which takes place with coincidences between the frequency of the rf field and that of Zeeman transitions in the atoms, is detected from the variation in the intensity of light passing from the spectral tube through an absorption cell filled with alkali metal vapor. Formulas are given for the time characteristics of the signal at the photodetector in this type of an instrument. A formula is derived for the first harmonic

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