Nosov S.D.

[redacted] professor; FILICHEVA, Z.V.; TIKHONOVA, A.A.; TROFIMOVA, [illegible]
[redacted]YEV, R.V.

Shortening the hospital stay of scarlet fever patients. Vop.okh. mat. i det. 2 no.[illegible]:34-37 Jl-Ag '57. ([illegible])

1. Iz kafedry detskikh infektsionnykh bolezney (zav. - prof. [illegible] Nosov) Ivanovskogo meditsinskogo instituta (dir. - dotsent [illegible] [illegible]nova)
(SCARLET FEVER)

NOSOV, S.D.

NOSOV, S.D., prof. (Ivanovo)

Achievements of Russian pediatrics in the treatment of infections in children in 40 years. Pediatriia no.10:65-74 O '57. (MIRA 11:2)
(COMMUNICABLE DISEASES)

NOSOV, S.D.

NOSOV, S.D., prof.

Some undescribed or little-known symptoms of diphtheria. Sov.med. 21 no.11:83-84 N '57. (MIRA 11:3)

1. Iz Kafedry detskikh infektsionnykh bolezney (zav.-prof. S.D. Nosov) Ivanovskogo meditsinskogo instituta.

(DIPHTHERIA, diag.
rare sympt.)

NOSOV, S.D.

[Intubation in the treatment of patients with diphtherial croup] Intubatsiia v terapii bol'nykh difteriinym krupom. Moskva, Medgiz, 1958. 81 p. (MIRA 11:10)

(LARYNX-INTUBATION)

NOSOV, S.D., prof.; KUZNETSOVA, R.V. (Ivanovo)

Gastric diphtheria. Klin.med. 36 no.2:57-61 F '58. (MIRA 11:4)

1. Iz kafedry detskikh infektsionnykh bolezney (zav. - prof. S.D. Nosov) Ivanovskogo meditsinskogo instituta i Ivanovskoy 1-y gorodskoy klinicheskoy bol'nitsy (glavnyy vrach S.I.Mazo)

(DIPHTHERIA, complications,
gastritis (Rus))
(GASTRITIS, etiology and patogenesis,
diphtheria (Rus))

NOSOV, S.D., prof.

"Measles" by V.A.Volynskaia, M.A.Dadash'ian. Reviewed by S.D. Nosov. Pediatriia 36 no.2:86-87 F '58. (MIRA 11:3)
(MEASLES)
(VOLYNSKAIA, V.A.) (DADASH'IAN, M.A.)

NOSOV, Sergey Dmitriyevich

[Prevention of children's infections transmitted by airborne droplets] Profilaktika detskikh vozdushno-kapel'nykh infektsii. Moskva, Medgiz, 1959. 133 p. (MIRA 13:9)
(COMMUNICABLE DISEASES--PREVENTION)

NOSOV, S.D., prof. (Ivanovo)

Ways and prospects for the improvement of preventive measures in acute childhood infections. Pediatriia 37 no.8:72-77 Ag '59.
(MIRA 13:1)
(COMMUNICABLE DISEASES, in infancy & childhood)

MOSOV, S.D., prof. (Moskva)

Methods and prospects for the prevention of air-borne droplet infections in children. Med.sestra 19 no.3:4-8 Mr '60.
(MIRA 13:5)

(CHILDREN--DISEASES)

NOSOV, S.D., prof.; LIVANOVA, L.V.

Use of antibiotics in measles. Sov.med. 24 no.12:81-86 D '60.
(MIRA 14:3)

1. Iz otdela ostrykh detskikh infektsiy Instituta pediatrii AMN SSSR (dir. - deystvitel'nyy chlen AMN SSSR prof.O.D.Sokolova-Ponomareva) na baze Detskoy klinicheskoy bol'nitsy No.2 imeni Ruzakova (glavnyy vrach - dotsent V.A.Krushkov).
(MEASLES) (ANTIBIOTICS)

NOSOV, Sergey Dmitriyevich, prof.; POTAPOVA, I.S., red.; BUL'DYAYEV, N.A., tekhn. red.

[Textbook of infectious children's diseases] Uchebnik detskikh infektsionnykh bolezney. 2. izd. Moskva, Medgiz, 1961. 351 p. (MIRA 15:4)
(CHILDREN—DISEASES) (COMMUNICABLE DISEASES)

NOSOV, S.D., prof.; LADODO, K.S., kand.med.nauk; KUZ'MINSKAYA, G.Ya.; NIKOLAYEVSKIY, G.P.; ITSELIS, F.G.; VINTOVSKINA, I.S.; KAGANOVICH, N.I., ZHUKOVA, L.D.; MIL'NER, B.I.; OSHEROVICH, A.M. PILATSKAYA, Ye.P.

Clinical epidemiological characteristics of certain viral infections in children's institutions. Pediatriia 39 no.4:6-13 Ap '61. (MIRA 14:4)

1. Iz otdela detskikh infektsii (zav. - prof. S.D. Nosov) Instituta pediatrii AMN SSSR i epidemiologicheskogo otdela (zav. - S.A. Samvelova) Moskovskoy gorodskoy sanitarno-epidemiologicheskoy stantsii.

(VIRUS DISEASES)

NOSOV, S.D., prof. (Moskva)

Problems in the evolution of childhood infections. Pediatriia no.2:3-11 '62. (MIRA 15:3)
(CHILDREN—DISEASES)

NOSOV, S. D., prof. (Moskva)

Apropos of the proposal for a new classification of gastro-intestinal diseases in infants (Pediatriia no. 12, 1960). Pediatriia no.4:75-83 '62. (MIRA 15:4)

(GASTROENTEROLOGY—CLASSIFICATION)

NOSOV, S.D., prof. (Moskva)

Apropos of Professor A.T. Petriaeva's articel, "Some controversial questions in contemporary pediatrics." Pediatriia no.7:64-65 '62.
(MIRA 15:12)

(PEDIATRICS) (PETRIAEVA, A.T.)

NOSOV, S.D., prof.

Vaccine protects against whooping cough. Zdorov'e 8 no.8:18-19 Ag '62. (MIRA 15:8)

(WHOOPING COUGH--PREVENTIVE INOCULATION)

NOSOV, S.D., prof.; VINTOVKINA, I.S., kand.med.nauk

Coxsackie and ECHO virus infections in children. Sov.med. 26 no.8:3-8 Ag '62. (MIRA 15:10)

1. Iz Instituta pediatrii (dir. - dotsent M.Ya.Studenikin) AMN SSSR.

(COXSACKIE VIRUSES) (ECHO VIRUSES)

AGABABOVA-SKOBELEVA, V.V., kand. med. nauk; DOBROKHOTOVA, A.I., prof. [deceased]; ZHUKOVSKIY, M.A., kand. med. nauk; LEBEDEV, D.D., zasl. deyatel' nauki prof.; MARTINSON, Kh.S., kand. med. nauk; MOLCHANOV, V.I., prof.; NOSOV, S.D., prof.; SOBOLEVA, V.D., doktor med. nauk; SOLOV'YEV, V.D., prof.; SUKHAREVA, M.Ye., prof.; SHAPIRO, S.L., kand. med. nauk; SHERMAN, R.Z., doktor med. nauk; SHIRVINDT, B.G., prof.; DOMBROVSKAYA, Yu.F., otv. red.; POTAPOVA, I.N., red.; BEL'CHIKOVA, Yu.S., tekhn. red.

[Multivolume manual on pediatrics] Mnogotomnoe rukovodstvo po pediatrii. Moskva, Medgiz. Vol.5.[Infectious diseases in children; aerial and droplet infections] Infektsionnye bolezni v detskom vozraste; vozdushno-kapel'nye infektsii. Red. toma S.D.Nosov. 1963. 547 p. (MIRA 16:6)

1. Chlen-korrespondent Akademii meditsinskikh nauk SSSR (for Skobeleva, Solov'yev). 2. Deystvitel'nyy chlen Akademii meditsinskikh nauk SSSR (for Dombrovskaya).
(PEDIATRICS) (COMMUNICABLE DISEASES)

NOSOV, S.D., prof. (Moskva)

Prevention of whooping cough at the contemporary stage.
Med. sestra 22 no.5: 36-39 My '63. (MIRA 16:8)
(WHOOPING COUGH—PREVENTIVE INOCULATION)

NOSOV,S.D., prof.

Urgent problems of clinical diagnosis of influenza and influenza-like virus infections in children. Pediatriia 42 no.5:3-6 My '63 (MIRA 16:11)

NOSOV, S.K.

Static analysis of the properties of a piston ring by the radial gap. Mauch.zap.Od.politekh.inst. 26:48-58 '60. (MIRA 15:5)

(Piston rings—Testing)

MOSOV, S.K.

Investigating the quality of piece-cast piston rings during the machining and heat treatment. Avt.prom. 29 no.3:32-35 Mr '63. (MIRA 16:3)

1. Odesskiy politekhnicheskiy institut.
(Piston rings—Testing)

NOSOV, S.K.

Apparatus for measuring the radial pressure diagrams of piston rings. Trakt. i sel'khozmash. no.6:41-42 Je '64 (MIRA 17:7)

1. Odesskiy politekhnicheskiy institut.

NOSOV, S.K.

Statistical control of the precision of piston-ring gaps and its evaluation by regression curves. Avt. prom. 30 no.8:42-43 Ag '64. (MIRA 17:11)

1. Odesskiy politekhnicheskiy institut.

Z/011/62/019/003/004/004
E112/E353

AUTHORS: Nosov, S.P., Dorrendorf, V.I. and Vladychina, Ye.N.

TITLE: Measurement of the specific volume resistivity of paints used for spraying in an electrostatic field

PERIODICAL: Chemie a chemická technologie; Přehled technické a hospodářské literatury, v.19, no. 3, 1962, 136, abstract Ch 62-1860 (Lakokras. materialy, no. 5, 1961, 54 - 57)

TEXT: For evaluating paints used for spraying in an electrostatic field it is essential to determine the specific volume resistance. The author recommends some Soviet-produced metering instruments (instrument MOM-4, etc.). The instruments are fitted with polytetrafluorethylene electrodes. The theory on which the measurements are based is described and resistance values are calculated. There are 2 photographs, 7 schematic diagrams.

[Abstracter's note: Complete translation.]

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GOL'DENBERG, L.A.; NOSOV, S.P.

From the history of the first scientific expeditions after the establishment of Soviet power. Trudy Inst.ist.est.i tekh. 37:311-329 '61. (MIRA 14:10)
(Lena Valley—Hydrography)

GUREVICH, Leonid Samoylovich, zhurnalist(Riga); NOSOV, Sergey Petrovich, nauchnyy sotr.; GUDKOVA, N., red.; SEMENOVA, O., tekhn. red.

[Army Commander Aleksandr Stepin']Komandarm Aleksandr Stepin'. Moskva, Gospolitizdat, 1962. 52 p. (MIRA 15:12)

1. Gosudarstvennyy arkhiv Sovetskoy Armii (for Nosov).
(Stepin', Aleksandr Karlovich, d.1920)

SOV/124-57-3-3686

Translation from: Referativnyy zhurnal. Mekhanika, 1957, Nr 3, p 149 (USSR)

AUTHOR: Nosov, S. S.

TITLE: Stress Determination in Engine Parts by Means of Wire Strain Gages (Opredeleniye napryazheniy v detalyakh dvigateley provolochnymi tenzometrami)

PERIODICAL: Sb. obz. i ref. po dvigatelestroyeniyu. 1955, Nr 3, pp 32-47

ABSTRACT: The paper adduces the requirements for electric-current collector devices used in measuring the stress distribution in moving engine parts as applied at the Central Diesel Scientific-research Institute: a) With contact brushes pressed against the collector rings by helical springs; b) with contact brushes on elastic frames; and c) mercury contacts. The first two types of current collectors showed satisfactory performance from 4,000 to 10,000 rpm, the third type -- from 0 to 25,000 rpm. The paper adduces the characteristics and a description of the circuitry of measuring instruments for measuring static and dynamic deformations.

N. I. Prigorovskiy

Card 1/1

TITLE: (Nosov, S.S.) List of scientific research works and symposia of works of TsNIDI completed in 1956. Anon. (Perechen nauchno-issledovatel-skikh rabot i sbornikob trudov TsNIDI zakonchennykh v 1956 godu)

PERIODICAL: "Energomashinostroenie", (Power Machinery Construction), 1957, No. 5, p. 32, (U.S.S.R.)

ABSTRACT: Solov'ev, S.N. Investigations into the parameters of systems for purifying peat and wood generator gas (No. 282).

An investigation was made into the influence of a number of factors on the purification and cooling of the gas (the type of nozzle, the density of sprinkling, the water consumption, etc.) in application to a gas generator type OG-16 working on peat or wood.

Nosov, S.S. Investigation of stresses in parts of the crankshaft/connecting rod mechanism of heavily loaded engines. (No. 293).

The work is devoted to the development and introduction of a procedure for measuring stresses in parts of the crankshaft/connecting rod mechanism and results of measurements of dynamic stresses in these parts are given.

Levin, M.I. Investigation of a system of remote control for the operation of diesel installations (No. 239).

An investigation was made into systems based on available equipment of Soviet manufacture; special devices and systems were developed and investigated which can be used to solve problems of remote control in combination with other tasks in the automation of diesel engines. During the course of the

Romashako, V.O. Consideration and systematisation of data on the wear of moving parts in diesel engines types Ch8.5/11; Ch10.5/13; Ch12/14; D6; D50; Ch36/45; D and Dr30/50 and 8-DR43/61. (No. 249).

Nikitin, M.D. and Kalinovskiy, O.E. Investigation of wear of piston rings and cylinder linings when running diesel engines at higher than normal speed and pressure (No. 247).

The work demonstrates the possibility of using small relative activity in investigating wear of diesel parts by a radio-active method using a scintillation counter. A method was developed for determining the wear of a diesel engine cylinder liner by a method using radio-active isotopes. A relationship is established between wear of the upper piston rings and the cylinder liner and the r.p.m. and maximum pressure of the cycle for a small four-stroke diesel engine.

Symposium No. 29. "Internal Combustion Engines".

The symposium contains articles describing investigations into the combustion chamber and pistons of engine 1Ch10.5/13; results are given of tests on an experimental engine 1Ch13/16 with a chamber in the piston when working with supercharging. The question of corrosion properties of oils with additives is considered and recommendations are made about oils to be used in diesel engines with lead-bronze bearings.

Symposium No. 30. "Internal Combustion Engines and Gas Generator Installations".

The symposium contains articles describing investigations

List of scientific research works and symposia of works of TsNIDI completed in 1956. Anon. (Cont.)

work a system of telemeasurements of the conditions of a diesel installation suitable for operation over very great distances was made and investigated.

Volchok, L.Ya. Development of a procedure and apparatus for measuring the speed of pulsating flows of gas (No. 291).

A thermo-anemometer was developed for isometric flows using a tungsten wire 11 microns in diameter and experimental pick-ups were made. A special rig was designed and made for calibrating the thermo-anemometer and investigating the thermal inertia of fine wires. An investigation was made of the thermal inertia of fine wires from 11 to 50 microns in diameter with air flow speeds of 25 - 325 metres/second.

Frolov, F.A. Heat transfer and the hydraulic resistance of oil coolers with wire type turbulators within the tubes (No. 309).

An investigation was made of heat transfer in an oil cooler working on a circuit with oil inside a pipe with a wire turbulator and water outside the pipe. Formulae are given for the relationship between heat transfer and hydraulic resistance in the oil section of the cooler. An outline is given of the design of a new efficient and small oil cooler and results are given of tests on a cooler connected to a supercharged engine for purposes of comparison with design for-

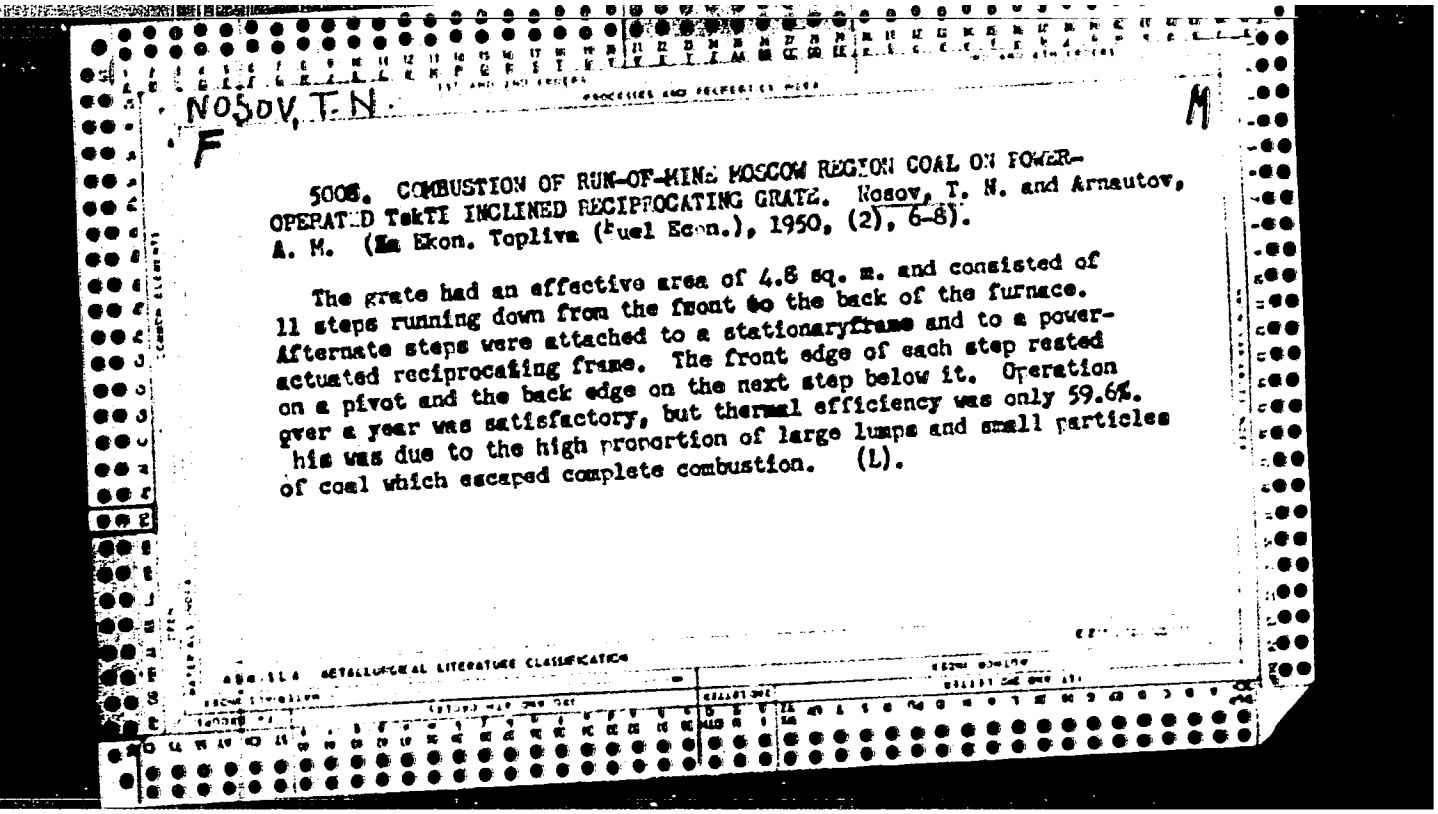
List of scientific research works and symposia of works of TsNIDI completed in 1956. Anon. (Cont.)

on an experimental four-stroke diesel engine type Ch18/22 of 52 h.p. working on diesel oil and gas fuel. Results are given of experimental work on the study of ignition in the gas engine. Materials are presented of a thermo-technical investigation of a two zone gas generator installation type OG-16 working on peat (questions of thermal preparation of the fuel, characteristics of the zone of operation, material and thermal balances.)

NOSOV, S.S., Cand Tech Sci -- (diss) "Dynamic strength of connecting rod ~~the tiller~~ elements." Len, 1959, 19 pp (Len Ship Building Inst) 150 copies (KL, 35-59, 114)

NOSOV, S.S.

Measuring stresses in the piston and connecting rod of the 2D-100 engine. TRUDY TSNIDI no.39:8-22 '60. (MIRA 15:8)
(Diesel engines) (Strains and stresses—Measurement)



NOSOV, T.N.

F

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5008. COMBUSTION OF RUN-OF-MINE MOSCOW REGION COAL ON POWER-OPERATED TsKTI INCLINED RECIPROCATING GRATE. Nosov, T. N. and Arnautov, A. M. (Ka Ekon. Topliva (Fuel Econ.), 1950, (2), 6-8).

The grate had an effective area of 4.8 sq. m. and consisted of 11 steps running down from the front to the back of the furnace. Alternate steps were attached to a stationary frame and to a power-actuated reciprocating frame. The front edge of each step rested on a pivot and the back edge on the next step below it. Operation over a year was satisfactory, but thermal efficiency was only 59.6%. his was due to the high proportion of large lumps and small particles of coal which escaped complete combustion. (L).

1. NOSOV, V. A.

2. USSR (600)

4. Machinery- Testing

7. Electric method for measuring stresses in parts of mechanisms, Sel'khozmashina, no. 5, 1953.

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

NOSOV, V.A.

POLOZKOV, A.A.; SHATILOV, K.V.; NOSOV, V.A.

Determining tensions in straw shaker shafts of the "Stalinets-8" combine. Sel'khozmashina no.4:20-22 Ap '54. (MLRA 7.5)
(Combines (Agricultural machinery))

SHATILOV, K.V., inzhener; NOSOV, V.A., inzhener

Investigation of stress on the wheel of the "Stalinets-6" combine. Sel'khozmashina no.6:17-19 Je '55. (MLRA 8:8)
(Combines (Agricultural machinery))

NOSOV, V. A.
Joint Academic Council, All-Union Sci Res Inst of the Mechanization of Agriculture (VIM) and All-Union Sci Res Inst of the Electrification of Agriculture (VIESKh)

NOSOV, V. A.- "Investigation of the working process of cutting thick-stalked crops, using the method of electrotensometric measurement." Joint Academic Council, All-Union Sci Res Inst of the Mechanization of Agriculture (VIM) and All-Union Sci Res Inst of the Electrification of Agriculture (VIESKh). Moscow, 1956. (Dissertation for the Degree of Candidate in Technical Sciences.)

SO: Knizhnaya Letopis' No. 13, 1956.

NOSOV, V.A.

Factors affecting knife sections in cutting stalks. Sel'khoznashina no.2:13-16 F '56. (MLRA 9:5)
(Mowing machines)

SHATILOV, K.V., inzhener; NOSOV, V.A., inzhener; POLOZKOV, A.A., dotsent.

Testing the endurance of suspension rails of primary screens in the "Stalinets-6" combine. Sel'khozmashina no.2:22-23 F '56. (MLRA 9:5)

1. SKB zavoda Rostsel'mash.
(Combines (Agricultural machinery))

LOLENKO, A.K., inzhener; SHATILOV, K.V., inzhener; MOSOV, V.A., inzhener; POLOZKOV, A.A., kandidat tekhnicheskikh nauk; CHERNYSHOV, N.P., inzhener.

Determining forces acting upon parts of the cutting apparatus in harvesting large-stemmed crops. Sel'khozmashina no.9:19-21 S '56. (MLRA 9:11)

1. Zavod Rostsel'mash.
(Harvesting machinery)

NOSOV, V.A., kand.tekhn.nauk

Investigating the performance of cutter bars in harvesting thick-stalked crops. Trakt. i sel'khozmash. no.9:16-19 S '58.
(MIRA 11:10)

(Harvesting machinery)

06185
SOV/115-59-11-13/36

6 (5)

AUTHOR: Nosov, V.A.

TITLE: The Use of Magnetic Tape in Recording by Oscillograph the Infralow Frequency Processes

PERIODICAL: Izmeritel'naya tekhnika, 1959, Nr 11, pp 33-35

ABSTRACT: The author describes an apparatus for recording on magnetic tape and reproducing of static and dynamic processes in the work of machines and mechanisms, using wire, induction and semiconductor transducers. The device was built by the author at the Ukrainskiy nauchno-issledovatel'skiy institut mekhanizatsii i elektrifikatsii sel'skogo khozyaystva (Ukrainian Scientific Research Institute of Agricultural Mechanization and Electrification). V.A. Pavlenko, V.P. Zabotin and V.I. Korol'kevich participated in this work. The equipment works according to the frequency modulation principle and consists of four single-channel recorder units, a tape winding mechanism and measuring bridges. The circuit diagram of the recorder part is shown in Fig 1

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The Use of Magnetic Tape in Recording by Oscillograph, the Infralow Frequency Processes

and explained briefly. The recording is reproduced by the amplifier shown in the circuit diagram in Fig 3. The graph in Fig 4 shows that the characteristics of the device is straight in the range up to 1500 cps which is completely adequate for recording operational processes of machines and mechanisms. There are 2 circuit diagrams and 2 graphs.

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78178
SOV/133-60-3-3/24

AUTHORS: Saar, T. M., Nosov, V. A., Bolkhovskikh, I. G. (Engineers)

TITLE: Study of Ingot Crust Formation by Means of Radioactive Isotopes

PERIODICAL: Stal', 1960, Nr 3, pp 208-211 (USSR)

ABSTRACT: This is a report of check-tests of steel pouring conducted at the Combine imeni Serov (kombinat imeni Serova) with application of radioactive isotopes S^{35} and Ag^{110}. The tests were made on 4.5 and 5.0-ton ingots. After bottom pouring the shrinkage head was covered by "lunkerite" (Special composition. Nr 1 "Lunkerite contains 30% of charcoal, 25% fire clay powder, 10% boxite, 20% FeSi (45% Si), 10% Al and 5% FeMn). For testing the possibility of crust formation as a result of isolated distribution of first portions of

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Study of Ingot Crust Formation by Means of Radioactive Isotopes

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metalcoming to the mold, the radioactive isotope S^{35} was introduced to the bottom of pouring gate. Its activity was 80-100 millicurie in mixture with iron powder. It was introduced in paper bags. For the study of distribution of last portions of metal coming to the mold with "pumping," two test ingots of steel 20Kh were cast. The radioactive sulphur (of 150 millicurie activity) was introduced into the pouring gate in a brass cartridge to the depth of 500-700 mm before the beginning of "pumping," which was continued for one minute (as per usual). To test the possibility of sinking of the surface metal crust into the lower part of ingot, six ingots were examined by means of isotope Ag^{110}, which has a hard gamma-ray radiation (silver practically does not dissolve in steel and remains in the region where it was introduced, for instance, in the crust). The authors state that (1) the investigation confirmed following causes of possible crust formation in the lower part of ingot: (a) a retarded filling of the lower part of ingot by the

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Study of Ingot Crust Formation by Means of Radioactive Isotopes

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first (cooled by passing through the gating system) portions of metal, which often remain isolated; (b) oxidation of metal in gating system under conditions of "pumping" (resulting from discontinuity of the stream); the thickened portions of such metal, pushed into the mold, may remain isolated in the ingot's body. (2) The possibility of the defect formation in the lower part of ingot due to the sinking of the crust, which forms on metal surface during pouring, was not confirmed. (3) Pouring of steel, with rapid filling of the bottom part to the height of 150-200 mm, results in marked decrease of crust formation. (4) Pouring with rapid filling of shrinkage head and without "pumping" (under conditions at the Combine) results in decrease of crust formation with simultaneous increase of rejects due to the shrinkage in head protions. There are 2 figures; 2 tables; and 3 Soviet references.

ASSOCIATION: Metallurgical Combine imeni Serov (Metallurgicheskiy kombinat imeni Serova)

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S/115/60/000/009/011/011
B116/B206

AUTHORS: Syvak, B. A. and Nosov, V. A.

TITLE: Ultrasonic recorder for the level of liquid media

PERIODICAL: Izmeritel'naya tekhnika, no. 9, 1960, 57-58

TEXT: An ultrasonic recorder built at the Institut avtomatiki Gosplana USSR (Automation Institute of the Gosplan UkrSSR) is described. With this device the level of a liquid can be determined in metallic and nonmetallic containers of any shape, at a maximum distance between pickups of 1.5 to 2 m (containers with a diameter above 2 m can be passed by ultrasonics by means of two such ultrasonic recorders connected in series), as well as in tubes with a diameter of at least 30 mm. The mode of operation of this device is based on the utilization of the difference between the acoustic properties of air and liquid media. The ultrasonic oscillations fade much more strongly in air than in liquids. Moreover, the degree of ultrasonics reflection (on the container walls) is much higher on the metal-air interface than on the liquid-metal interface. Above the level of liquid, the ultrasonics, therefore, do not pass the walls and the interior of the con-

Card 1/[illegible] 3

Ultrasonic recorder for the ...

tainer. Below the level of liquid, however, part of the ultrasonic energy is transmitted to the receiver pickup. The two barium titanate pickups $Б_1$ and $Б_2$ (Fig.) operate at a frequency of 1 Mc and are placed in such a way that the exactly directed ultrasonic beams of $Б_1$ with a maximum amplitude are received by the receiver pickup $Б_2$. The maximum acoustic connection between both pickups is obtained experimentally by selecting position and angle of inclination of one pickup with reference to the other. Both pickups are connected to the input and output of an amplifier built up according to a transformer circuit. The amplifier operates at self-excitation which is maintained by means of the acoustic feedback through the layer of liquid by the barium titanate pickups. If there is no liquid in the path of the ultrasonics, the amplifier is not self-excited. The self-excitation of the amplifier is interrupted when the level of the liquid sinks. If the level of the liquid sinks below the level of the pickups, the relay P responds and thus shows the drop of the level. The experiments showed that the reading error amounts to maximum 0.5 mm. The signal of the pickup $Б_1$, amplified by means of the tube a, is given via the coupling transformer Tp_1

NOSOV, V.A.; VLASOV, N.N.

Reduction of transverse cracks on high-grade steel ingots.
Metallurg 6 no.9:19-20 S '61. (MIRA 14:9)

1. Metallurgicheskiy kombinat imeni Serova.
(Steel ingots--Defects)

NOSOV, V.A.; MAMUTA, G.D.

Ultrasonic signalling device for determining the clarified pulp zone. Ism.tekh. no.11:54-55 N '61. (MIRA 14:11)
(Ultrasonic waves--Industrial applications)

NOSOV, V.A., kand.tekhn.nauk; BARASHKOV, S.K.; DYACHENKO, M.A.; SOSENKO, K.P.

Ultrasonic instrument for measuring electrolyte concentration. Avtom.i prib. no.1:56-59 Ja-Mr '62. (MIRA 15:3)

1. Institut avtomatiki Gosplana USSR.
(Ultrasonic testing)

NOSOV, V.A., kand.tekhn.nauk; BARASHKOV, S.K.; GOLOTA, P.A.; YEKIMOV, V.K.

Selective measurement of alkali concentration in multiple component solutions of aluminum production. Avtom.i prib. no.3:58-60 Jl-S '62. (MIRA 16:2)

1. Institut avtomatiki Gosplana UkrSSR.
(Alkalies)
(Aluminum industry)

ISUPOV, V.F., inzh.; NOSOV, V.A., inzh.; SUKHMAN, L.Ia., inzh.; SMIRNOV, L.A., inzh.; CHERNUKHOVA, A.A., inzh.; Prinimali uchastiye: SEMENENKO, P.P.; GLAGOLENKO, V.V.; KOROSTELEV, S.K.; VOLOSNIKOV, B.M.; BELYAKOV, A.I.; FADEYEV, I.G.; ROMANOV, A.A.

Use of lightweight grog firebrick for the lining of riser heads. Stal' 22 no.6:517-518 Je '62. (MIRA 16:7)

1. Metallurgicheskiy kombinat im. Serova i Ural'skiy nauchno-issledovatel'skiy institut chernykh metallov.
(Steel ingots) (Refractory materials)

AM4037982 BOOK EXPLOITATION S/

Nosov, Vladimir Andreyevich (Candidate of Technical Sciences)

Ultrasound in the chemical industry (Ul'trazvuk v khimicheskoy promy*shlennosti), Kiev, Gostekhizdat USSR, 1963, 243 p. illus., biblio. 3,000 copies printed.

TOPIC TAGS: ultrasonics, chemical engineering

PURPOSE AND COVERAGE: The book presents information on the use of ultrasonics in the chemical industry and there is a description of the methods of inspecting and analyzing these processes. The most important theoretical information and the results of experimental research and industrial use of ultrasonics are included. The book is intended for engineers, technicians, and researchers working on the use of ultrasonics.

TABLE OF CONTENTS [abridged]:

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AM4037982

Appendix -- 22B
Bibliography -- 2L0

SUB CODE: GC, PH SUBMITTED: 020ct63 NR REF SOV: 042

OTHER: 044 DATE ACQ: 23Apr64

Card 2/2

NOSOV, V.A., kand. tekhn. nauk; MAMUTA, G.D.; TARASENKO, O.V.

Ultrasonic meter of sand concentration in pipes of dredges.
Avtom. i prib. no.4:62-64 O-D '63. (MIRA 16:12)

1. Institut avtomatiki Gosplana UkrSSR.

NOSOV, V.A., kand. tekhn. nauk; DYACHENKO, M.A.; SOSENKO, A.P.; MINOVSKIY, A.I.

Ultrasonic meter of alkali concentration. Avtom. i prib. no.4:64-68 O-D '63. (MIRA 16:12)

1. Institut avtomatiki Gosplana UkrSSR.

NOSOV, V.A

L 20086-65 EWT(m)/EWP(t)/EWP(b) JD/WLK
ACCESSION NR AM4049548 BOOK EXPLOITATION S/ 6?/

Prokhorenko, Kim Kondrat'yevich; Verkhovtsev, Emil' Vladimirovich; Bakunenko, Sergey Panteleyevich; Vasil'yev, Nikolay Yegorovich; Ishchuk, Nikolay Yakovlevich; Fadeyev, Ivan Gavrilovich; Nosov, Viktor Aleksandrovich; Serenenko, Petr Pimenovich; Isupov, Vasiliy Fedorovich

Melting and pouring of quality steels (Vyplavka i razlivka kachestvennykh staley), Moscow, Izd-vo "Metallurgiya", 1964, 200 p. illus., biblio. Errata slip inserted. 2,450 copies printed.

TOPIC TAGS: quality steel, steel teeming, steel melting, metallurgical furnace

PURPOSE AND COVERAGE: This book reports on the results of work on improving the technology of melting, deoxidation, and teeming of quality steels in electric arc, acid and basic open-hearth furnaces conducted at the Izhevsk Metallurgical Plant and the Serovsk Metallurgical Combine. Great attention is given to description of the measures to reduce contamination with nonmetallic inclusions of ball bearing and structural steels, presentation of material on the effectiveness of teeming steel under a liquid slag, and to increasing the output of sound metal from the ingots due to the use of various methods of heating their hot top. The results of using rare earth elements for deoxidation and modification of steel are given.
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L 20086-65
ACCESSION NR AM4049548

The book is intended for engineers and technicians working in the production of quality steels and can also be useful to students of higher educational institutions.

TABLE OF CONTENTS [abridged]:
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Ch. I. Technology of melting steel in electric arc furnaces -- 7
Ch. II. Technology of melting steel in basic open-hearth furnaces -- 61
Ch. III. Technology of melting steel in acid open-hearth furnaces -- 81
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Ch. V. Teeming steel under a protective layer -- 129
Ch. VI. New methods of inspecting the macrostructure of metal -- 173
Ch. VII. Experience in the use of rare earth elements to improve the quality of steels -- 182

SUB CODE: MM
OTHER: 003

SUBMITTED: 25Apr64 NR REF SOV: 044

Card 2/2

VOLKOVAVOV, V.F.; MOSOV, V.A. (Kuybyshev)

The local extremum principle for a hyperbolic equation with constant coefficients. Volzh. mat. sbor. no.1:226-230 '63. (MIRA 19:1)

KEYS, N.V.; KOMISSAROV, A.I.; ISUPOV, V.F., inzh.; FADEYEV, I.G., inzh.; NOSOV, V.A., inzh.

New developments in research. Stal' 25 no.7:614-615 Jl '65. (MIRA 18:7)

ISUPOV, V.F., inzh.; MASHURA, G.P., inzh.; NOSOV, V.A., inzh.

New developments in research. Stal' 25 no.7:665 Jl '65. (MIRA 18:7)

L 27615-66 EWT(m)/EWA(d)/EWP(t)/ETI IJP(c) JD

ACC NR: AP6018478 SOURCE CODE: UR/0133/66/000/003/0219/0223

AUTHOR: Nosov, V. A. (Engineer); Ishchuk N. Ya.(Candidate of technical sciences); Isupov, V. F. (Engineer); Prokhorenko, K. K. (Candidate of technical sciences); Sukhman, L. Ya. (Engineer); Olagolenko, V. V. (Engineer); Solyannikov, B. G.(Engineer)

ORG: Metallurgical Combine im. A.K. Serov (Metallurgicheskiy kombinat); Institute of Casting Problems, AN SSSR(Institut problem lit'ya AN SSSR)

TITLE: Pouring steel under molten slag produced by combustion of an exothermic mixture

SOURCE: Stal', no. 3, 1966, 219-223

TOPIC TAGS: cast steel, slag, metal pipe/38KhMYuA cast steel, 12KhlMF cast steel, 20P cast steel, 15 GS cast steel, 38KhA cast steel, 38KhS cast steel, 40-45 KhN cast steel, ShKh15 cast steel, 35KhGSA cast steel, 55S2 cast steel, 60S2 cast steel, 38KhGS cast steel

ABSTRACT: The paper is a report on a method developed in 1962 at the Metallurgical Combine imeni A. K. Serov for pouring steel under molten slag produced directly in the molds by combustion of an exothermic mixture. The first type of steel cast by this method was 38KhMYuA. The method is presently being used for pouring the following types of steel: 12KhlMF, 20P, 15GS, 38KhA, 38KhS, [illegible] and 38KhGS. The exothermic mixture has

the following composition (wt %): magnesium powder — 2.5; aluminum powder —

UDC: 669.18.046.558.7

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L 27615-66

ACC NR: AP6018478

4.5; sodium nitrate — 11; oxidized manganese ore — 20; fluorite — 20; lapure sodium disilicate — 20; blast-furnace slag — 12. It is shown that the production of liquid slag directly in the molds by combustion of this exothermic mixture gives the simplest means for casting under molten slag in mass production conditions. Scrap of finished products (blanks) are considerably reduced for surface defects when steel is poured under slag (particularly for 38KhMYuA steel where rejects are reduced by a factor of 32.5). This pouring method also reduces the work required for trimming blanks which increases the yield of bar stock for 8hKh15 and 38Kh3 steel by 10 and 15% respectively. When metal poured under slag is used for pipe production, the pierceability of the blanks is improved and mechanical damage to the outside and inside surfaces is sharply reduced. A. A. Chepurnova participated in the work. Orig art. has: 5 tables and 3 figures. [JPRS]

SUB CODE: 11, 13 / SUBM DATE: none / ORIG REF: 003

Card 2/2

Nosov, V.D.

MAYSAK, M.S.; NOSOV, V.D.

Machines for removing metal rolls from reels. Biul.TSNIICHM no.17:43 (325) '57. (MIRA 11:4)

1.Magnitogorskiy metallurgicheskiy kombinat.
(Rolling mills)

S/137/61/000/007/015/072
A060/A101

AUTHORS: Nosov, V. D.; Mel'tser, V. V.; Pratusevich, A. Ye.

TITLE: Improvement of the technology and operation of the continuous thin-sheet hot rolling mill 1450

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 7, 1960, 5, abstract 7D30 ("Tr. Konferentsii: Tekhn. progress v tekhnol. prokatn. proiz-va". Sverdlovsk, Metallurgizdat, 1960, 476-485)

TEXT: The grading of the mill 1450 and the plant equipment are described. The extent of increase in the power and working capacity of the following sections of the shop are enumerated: the slab store, rolling mill, removing part of the mill. The measures required for improving the technology and increasing the service life of the equipment are indicated.

V. Mezis

[Abstracter's note: Complete translation]

Card 1/1

L 44005-66 EWT(m)/EWP(t)/T/ETI/EWP(k) IJP(c) JD/HW

ACC NR: AP6029871 SOURCE CODE: UR/0413/66/000/015/0022/0022

INVENTOR: Voronov, F. D.; Filatov, A. D.; Gun, S. B.; Selivanov, N. M.; Nosov, V. D.; Savel'yev, G. V.; Goncharov, F. I.; Plotnikov, P. I.; Roshkov, S. A.; Kustobayev, G. G.; Polushkin, V. P.; Arkhipov, V. M.; Uziyenko, A. M.; Kolov, M. I.; Kozhevnikov, V. P.; Shapiro, B. S.; Kalugin, V. F.; Grudev, P. I.; Aksenov, B. N.; Khomyachkov, A. P.; Rudakov, Ye. A.; Kuzema, I. D.; Gomzhin, V. V.; Poydyshev, B. N.; Shternov, M. M.

58

ORG: none

B

TITLE: Method of making high-strength steel plates by pack rolling. Class 7, No. 184232

SOURCE: Izobret prom obraz tov zn, no. 15, 1966, 22

TOPIC TAGS: high strength steel, high strength steel plate, high strength steel sheet, steel plate rolling, steel sheet rolling

ABSTRACT: This Author Certificate introduces a method of pack rolling high-strength steel plates and sheets up to 10 mm thick and up to 3500 mm wide in a carbon steel envelope. The method includes cleaning, coating, making of the pack, heating, rolling and subsequent heat treatment. To ensure an accurate thickness of the plates

Card 1/2 UDC: 621.771.23

L 44005-66

ACC NR: AP6029871

or sheets regardless of their location in the pack, the thickness of the envelope must be at least 0.6 of the total initial thickness of the high-strength plates of the pack. [ND]

SUB CODE: 13/ SUBM DATE: 18Jun64/ ATD PRESS: 5070

Card 2/2 blg

NOSOV, V. G.

"On the Theory of Nuclear Fission near Threshold," a paper presented at the Atoms for Peace Conference, Geneva, Switzerland, 1955

USSR/Nuclear Physics - Fission width FD-3267

Card 1/1 Pub. 146 - 26/44

Author : Nosov, V. G.

Title : Statistical theory of fissioning width

Periodical : Zhur. eksp. i teor. fiz., 29, No 6(12), Dec 1955, 881-882

Abstract : N. Bohr and J. Wheeler (Phys. Rev., 56, 1939) using the methods of classical statistics evaluated the fissioning width as $\Gamma_f \propto (D/2\pi)N^*(E-F_f)$, where D is the distance between levels, N* is the number of levels corresponding to the degrees of freedom not connected with fission, and N*(E) is the number of levels with energy of excitation not exceeding E. Similar evaluations were carried out by H. Kramers (Physica, 7, 1940). As has been shown (L. Landau and Ye. Lifshits, Statisticheskaya fizika, State Technical Press, 1951), classical statistics is applicable for temperature T much larger than hw (ω : frequency of oscillations of the nucleus' shape which are connected with fission), and therefore the mentioned evaluations cannot be employed for $T \ll h\omega$. The writer of the present communication derives an evaluation, like that of Kramers, in the form $\Gamma_f \propto (h\omega/2\pi)\cdot N^*(E-E_f)/N^*(E)$, true for the entire temperature interval. Four references: e.g. L. Landau, ZhETF, 7, 1937.

Institution: Academy of Sciences of the USSR

Submitted : May 30, 1955

Card	1/1	Pub. 22 - 17/46
Authors	:	Nosov, V. G.
Title	:	Excitation of the rotational levels during α -decay
Periodical	:	Dok. AN SSSR 103/1, 65-67, Jul 1, 1955
Abstract	:	An analysis is presented of the so-called rotational energy levels of some nuclei which are the products of α -decay. The rotational energy level phenomenon was discovered experimentally. Theories on the excitation of energy levels are discussed. Three references: 1 USSR and 2 USA (1947-1954).
Institution	:	.....
Presented by:		Academician L. A. Artsymovich, March 14, 1955

NOSOV, V. G.

"Energy Dependence of the Fission Width" a paper presented at the International Conference on Nuclear Reactions, Amsterdam, 2-7 July 1956.

D551274

NOSOV, V. G.

"Analysis of the Stability of a Nucleus to Asymmetric Deformation", a report presented at the Conference on the Physics of Nuclear Fission, 19-21 January 1956, Atom Energ., No. 1, 1956

NOSOV V. G.

USSR/Nuclear Physics - Nuclear Reactions. C-5

Abs Jour : Ref Zhur - Fizika, No 4, 1957, 8799

Author : Nosov, V.G.
Inst :
Title : Energy Dependence of the Fission Width

Orig Pub : Zh. eksperim. i teor. fiziki, 1956, 31, No 2, 335-336

Abstract : N. Bohr and Wheeler obtained an expression for the fission width. An analysis of this expression shows that near the threshold the energy course of the fission width should be non-monotonic.

Card 1/1

NOSOV, V. G.

"Odd-Nuclei Alfa-Decay Fine Structure,"

paper included in the program of the All-Union Conf. on Nuclear Reactions in Medium and Low Energy Physics, Moscow, 19-27 Nov 1957.

(Acad. Sci. USSR)

NOSOV, V.G.

NOSOV, V.G.

Theory of the fission of heavy nuclei near the threshold. Atom.energ. supplement no.1:52-57 '57. (MIRA 10:10)
(Nuclear fission)

KOSOV, V.G.

Fine structure in the α-decay of odd nuclei [with summary in English]. Zhur. eksp. i teor. fiz. 33 no.1:226-231 Jl '57. (MLRA 10:9)
(Nuclei, Atomic--Decay)

Nosov, V. G.

AUTHOR: Nosov, V.G. 48-12-1/15

TITLE: The Microstructure of the α-Decay of Even-Even Nuclei (Tonkaya struktura α-raspada chetno-chetnykh yader)

PERIODICAL: Izvestiya AN SSSR, Seriya Fizicheskaya, 1957, Vol. 21, Nr 12, pp. 1551 - 1555 (USSR)

ABSTRACT: In the α-decay of nonspherical heavy nuclei an excitation of the rotation-levels in the duaghter-nucleus is observed. The relative probability of the excitation of individual rotation-levels in the daughter-nucleus is expressed by its equilibrium-deformation. In the case of the even-even nuclei the calculations are especially simple. Equation (1) is written down and must in this case be satisfied by the wave-function of the α-particle in a coordinate system rotating together with the daughter-nucleus. The special solution ψ_1 is sought which on great distances describes the α-particle removing itself from the nucleus with the momentum 1. After substitution into equation (1) the solution is found in quasiclassical approximation. (4). For the case of a slightly spherical daughter-nucleus the solution of equation (4) is simpler. The electrostatic potential produced by the daughter-nucleus may easily be calculated in form of a

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series. In transitions to $r \to \infty$ (r is the distance between the daughter-nucleus and the α-particle) it becomes evident that the α-particle-flux through the closed sphere corresponding to the state ψ_l does not depend on l (momentum). If the real wave-function of the α-particle is therefore represented in the form of $\psi = \sum c_l \psi_l$, the relative probability of the excitation of the rotation-level with the momentum l will be equal to $|c_l|^2$. The c_l-coefficients can be expressed by the value of the wave-function at the surface of the nucleus $\psi(S)$. It is shown that the conception of the wave-function of an α-particle may very easily be generalized for the domain within the nucleus. For from the purely formal standpoint the mother-nucleus can be considered a complicated system consisting of α-particles and the daughter-nucleus. When the wave-function of the i-th steady state of an α-particle is expressed by χ_i^α and the wave-function of the k-th state of the daughter-nucleus by χ_k, the wave-function of the original state in the mother-nucleus can be represented by $\sum_{ik} \psi_{ik}(r)\chi_i^\alpha \chi_k$. r is the radius-vector of the α-particle with regard to the center of gravity of the daughter-nucleus. The term $\psi_{oo}(r)\chi_o^\alpha \chi_o$ corresponds to the

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non-excited state of the daughter-nucleus and the α-particle. Starting from the conception of a nomogeneity of the nuclear matter and the small free length of path of the α-particle in it, it may be assumed that $\psi_{00}(r)$ = constant. On this assumption the final equation for the relative probability $w_1 = |c_1|^2$ is obtained. In heavy nuclei the quadrupole-deformation $\xi = R_0 \alpha_2 P_2(\mu)$ is the most essential one. The equations are written down with restriction to the quadrupole-deformation. From this formula (13) and the formula for γ the deformation α_2 of the corresponding daughter-nucleus is calculated on the basis of the test results (references 2 - 4) for the excitation of the rotation-level 2^+ in α-decays. As no sufficiently reliable and sufficient data on the coulombian excitation of α-active nuclei were hitherto obtained, more accessible methods for the comparison of theoretical and experimental data must be sought. The moment of inertia of daughter-nucleus I may serve as such a quantity very accessible with regard to experiment. This moment is directly determined from the excitation-energy of level 2^+ and can in a number of cases be exactly measured. But in a theoretical respect a comparison according to the moments

of inertia is very inexact. In spite of all this it may roughly quantitatively be assumed that under otherwise equal conditions the moment of inertia also increases with an increase in deformation. From the diagram is to be seen that the α_4-values which would be necessary for the production of an agreement between theory and experiment are small. Thus the probability of an excitation of level 4^+ proves rather sensitive under conditions of very fine surface-form-details of the nucleus. It is to be expected that the excitation of level 6^+ will prove to be sensitive to even fine surface-form-details of the daughter-nucleus. There are 1 figure, 2 tables, and 4 references, 1 of which is Slavic.

AVAILABLE: Library of Congress

NOSOV, V. G.

56-7-32/66

AUTHOR NOSOV, V.G.

TITLE Fine Structure in the α-Decay of Odd Nuclei
(Tonkaya struktura α-raspada nechetnykh yader. Russian)

PERIODICAL Zhurnal Eksperim. i Teoret. Fiziki, 1957, Vol 33, Nr 7, pp 226 - 231
(U.S.S.R.)

ABSTRACT The present paper investigates the excitation of the rotation levels on the occasion of the α-decay of the non-spherical odd nuclei. The system daughter nucleus +α-particle produced on the occasion of the decay is characterized not only by the energy E of the decay, but also by the total angular momentum K and its projections onto the rigid axis K_z. The equations for the wave function of the system daughter nucleus +α-particle are written down. These equations are here solved in a reference system which rotates with the nucleus. The operators thus found for the angular momentum are explicitly written down. The author here looks for a particular solution of the initially mentioned equation, which, at large distances, describes the following system: A α-particle with the angular momentum ℓ which removes itself from the nucleus and a daughter nucleus in state with the angular momentum j. The rather voluminous solution is explicitly written down. In the case of a weakly non-spherical daughter nucleus the solution of this equation is considerably simplified. Further possibilities of simplification are shown.

Card 1/2

AUTHOR NOSOV, V.G. PA - 2112

TITLE The Fine-Structure in the α-Decay of even-even Nuclei (Ton'kaya struktura α-racpada chetno-chetnykh yader).

PERIODICAL Doklady Akademii Nauk SSSR, 1957, Vol 112, Nr 3, pp 414-417 (U.S.S.R.)

Received 3/1957 Reviewed 4/1957

ABSTRACT On the occasion of the α-decay of nonspherical heavy nuclei an excitation of the rotation levels of the daughter nucleus is observed. The behavior of the system daughter nucleus + α-particle is described by means of a Schroedinger equation, which is explicitly given and explained. The angular momentum of the daughter nucleus is expressed by the total angular momentum $\vec{K}$ and by the orbital angular momentum $\vec{I}$ of the α-particle by $\vec{J} = \vec{K} - \vec{I}$. In the case of even-even nuclei $\vec{K} = 0$, $\vec{J}^2 = \vec{I}^2$ applies and therefore the corresponding Schroedinger equation is $(\hbar^2/2T)\vec{I}\Psi - (\hbar/2m)\nabla^2\Psi + U(\xi, \eta, \zeta) = E\Psi$. This equation was first derived by V.STRUTINSKIJ, Zhurn.Eksp.i Teoret.Fiziki, 30, 411 (1956). The potential energy depends only on the coordinates ξ, η, ζ of the α-particle with respect to the nucleus, i.e. on the Carthegian coordinates which rotate together with the nucleus and not on Euler's angles. Therefore the aforementioned Schroedinger equation is solved in the variables ξ, η, ζ, Ω. On the occasion of transition from the immobile system of coordinates to the rotating operator, $\vec{I}^2$ and ∇^2 retain their form, and finally the following form is obtained for the Schroedinger equation. $(1/r)\partial^2/\partial r^2(r\Psi) + ((mI) + (1/r^2))\partial/\partial\mu\,[(1-\mu^2)\partial\Psi/\partial\mu] + (2m/\hbar^2)[E - U(r,\mu)]\Psi = 0$. The particular solution which describes the α-par-

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The Fine-Structure in the α-Decay of even-even Nuclei.

ticle moving away from the nucleus with the angular momentum l has the following form. $\Psi_\ell(\vec{r},\mu) = (\sqrt{2\ell+1}/2)P_\ell(\mu)\Psi_\ell(r,\mu)$. Here Ψ_1 no longer depends on μ in the case of large μ. By the insertion of this particular solution an equation is obtained which can be solved in quasiclassical approximation. The corresponding development for $\sigma(r,\mu)$ is represented in the form $\sigma = \sigma_{-1} + \sigma_0 + \sigma_1 + \ldots$, for the corresponding approximations σ_k an infinite sequence is here given. The solution of this system becomes easier in the case of a slightly nonspherical daughter nucleus. The values of σ_k are then set up as power series of ξ and also the electrostatic potential is computed in form of an analogous series. The individual terms of this powerseries are explicitly given. If the wave function of the system is represented in the form $\Psi = \sum c_1\Psi_1$, the relative excitation probability of the rotation level with the angular momentum l amounts to $w_1 = |c_1|^2$. The coefficients c_1 can be expressed without difficulty by the value of the wave function $\Psi(S)$ on the surface of the nucleus. In the case of slightly nonspherical nuclei it is best to put $\Psi(S) = \text{const}$. A formula for the corresponding relative probability is given. By means of the formula mentioned here it is possible on the basis of experimental data to compute the deformation of some nuclei.
(No illustrations)

Card 2/3

NOSOV, V. G.

INOPIN, Ye. V.

AUTHOR: Varshalovich, D. SOV/53-65-4-7/13

TITLE: The VIII Annual Congress of Nuclear Spectroscopy (VIII yezhegodnoye soveshchaniye po yadernoy spektroskopii). I

PERIODICAL: Uspekhi fizicheskikh nauk, 1958, Vol. 65, Nr 4, pp. 721 - 722 (USSR).

ABSTRACT: The 8th Congress of Nuclear Spectroscopy took place in Leningrad from January 27 to February 3, 1958. It was attended by 300 scientists from the USSR, further by scientists from China, France, Poland, Czechoslovakia, Hungary, Eastern Germany, Yugoslavia, and the Mongol Democratic Republic. 4 main lectures and about 90 reports were heard. The main lectures dealt with problems concerning nuclear models, the α- and β-decay, γ-radiation, internal conversion, and nuclear isomerism. B.S.Dzhelepov, Corresponding Member, Academy of Sciences, USSR, opened the conference. Lectures were held by: V.Yu. Gonchar, Ye. V. Inopin, S.P.Tsytko (FTI, AS UkrSSR) on light nuclei and generalized nuclei models; L.K. Peker (BAN SSSR-Library AS USSR); Yu.M.Shirokov (MGU-Moscow State University), L.A.Sliv (LFTI-Leningrad Physical-Technical Institute) et al. on levels in Mg^{24}, Mg^{25} and Al^{25}; D.G. Alkhazov, A.P.Grinberg, G.M.Gusinskiy, K.I.Yerokhina and I.Kh.Lemberg (LFTI) on having found no rotational levels at E<1 MeV in Cr, Zn, and Mn nuclei. The same research workers also reported on the discovery of vibrational γ-levels in W^{182}, W^{184}, W^{186}- nuclei by means of the method of the Coulomb (Kulon) excitation at $E_{exc} \sim 1$ MeV. L.K.Peker (BAN SSSR) gave a survey report: "Concerning Some Particulars in Vibrational Levels of Deformed Nuclei". Lectures were held also by: D.P.Zaretskiy (AN SSSR - AS USSR) on radiation transitions in deformed nuclei with the spin = 1/2; V.S. Shpinel' 2 NIFI MGU (2nd Scientific Research Institute of Physics, Moscow State University) on the level displacement and the probability of corresponding β - and γ - transitions in odd nuclei; D.P.Zaretskiy (AN SSSR - AS USSR) on the influence of the spin-orbital coupling upon the magnetic moments of the nuclei. A.I.Baz' (AN SSSR -AS USSR) on the existence of light nuclei with high neutron or proton excess; V.A.Kravtsov (LPI-Leningrad Polytechnic Institute) on the formation of nucleon pairs in nuclei; L.L. Gol'din, A. D. Piliya, G.I.Novikova, K.A.Ter-Martirosyan (TTL AN SSSR) on alpha decay on rotational levels of odd nuclei; V.G. Nosov (AN SSSR - AS USSR) on alpha decay of nonspherical nuclei (survey); A.I.Alikhanov, G.P.Yeliseyev, V.A.Lyubimov, V.V.Ershler (TTL AN SSSR) on polarization measurements at electrons emitted in the β-decay of Tm^{170}, Lu^{177}, Ag^{198}, Sm^{153}, Re^{186} (ΔI= 0,1, Δπ= -1) as well as in that of Sr^{90} and Y^{90} (ΔI= 2, Δπ= -1); V.P.Rudakov (AN SSSR - AS USSR) on measurements of the (β-γ) angular correlations in Sm^{153}-decay; N.A.Burgov and Yu.V.Terekhov (TTL AN SSSR) on investigations of the electron-neutron correlations and the resonance scattering of γ-radiation; B.K.Kerimov and I.M.Nadzhafov (MGU-Moscow State University) on the bremsstrahlung of longitudinally polarized electrons; A.I.Mukhtarov and Yu.S. Perov (MGU) on the effective cross section of the scattering of polarized electrons and positrons at polarized electrons; Ya.E.Chudars and I.Ya.Taure (Riga) on the determination of the intensity of the components of the complex β-spectrum according to the Fermi diagram; I.M.Band, L.N.Zyryanova, and Yu.P.Suslov, LGU (Leningrad State University) on the computation of the probability of the permitted and of the forbidden capture of electrons by a nucleus.

21(7), 24(5)

AUTHOR: Nosov, V. G. SOV/56-36-5-51/76

TITLE: On the α-Decay Constants of Nonspherical Nuclei
(O konstantakh α-raspada nesferichnykh yader)

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1959, Vol 36, Nr 5, pp 1580-1581 (USSR)

ABSTRACT: In the present "Letter to the Editor" the author first discusses a number of papers previously published by himself as well as the results obtained (Refs 1 - 4). He developed an analytical theory of the α-decay of nonspherical nuclei and derived simple formulas for the relative intensity of the fine structure lines. The expressions found by him for the wave functions also permit calculation of the absolute decay probability. In the present paper formula (1) gives the decay probability for even-even nuclei, and formula (4) gives that for odd nuclei (for the derivation of these formulas see references 1, 2). For a quantity called "internal α-particle production probability" w_α, it holds that $w_\alpha = \int |\psi_{00}|^2 dV =$

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On the α-Decay Constants of Nonspherical Nuclei SOV/56-36-5-51/76

$\frac{4}{3}\pi R_0^3 |\psi_{od}|^2 < 1$. For a small free length of path of the α-particles $w_\alpha \ll 1$. In the present paper the w_α-values calculated for a large number of heavy nuclei by using experimental data are published in form of 2 tables. Table 1 contains the values for 20 even Ra-, Th-, U-, Pu-, Cm- isotopes and for Cf^{250}; the average value $\overline{w}_\alpha = 0.10$. Table 2 gives the w_α-values, $\overline{w}_\alpha = 0.047$, for 8 odd isotopes of various elements between Ac^{227} and Bk^{249}. This shows that the $\overline{w}_\alpha$-values for odd nuclei are only half of those for even nuclei. There are 2 tables and 5 Soviet references.

ASSOCIATION: Institut atomnoy energii Akademii nauk SSSR (Institute for Atomic Energy of the Academy of Sciences, USSR)

SUBMITTED: January 14, 1959

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21 (1), 21 (8) SOV/56-37-3-59/62

AUTHOR: Nosov, V. G.

TITLE: On the Problem of the Determination of the Deformation of Nuclei From the Fine Structure of α-Decay

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1959, Vol 37, Nr 3(9), pp 886 - 887 (USSR)

ABSTRACT: The present "Letter to the Editor" is a continuation of a previous paper (Ref 1), in which the author develops a theory of the α-decay of even-even nuclei and showed that investigations of the fine structure of α-decay make it possible to determine the form of the daughter nucleus. For the relative probability of the excitation of a rotational level of the daughter nucleus with the momentum J the following formula was obtained:

$$w_J = (2J+1)e^{-\beta J(J+1)}\left|\int_{-1}^{1}\chi(\mu)e^{\beta P_2(\mu)}P_J(\mu)d\mu\right|^2 \Big/ \left|\int_{-1}^{1}\chi(\mu)e^{\beta P_2(\mu)}d\mu\right|^2$$

$\chi(\mu)$ is the wave function of the α-particles on the nuclear surface, for which it holds that

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$R(\mu) = R_0\{1 + \alpha_2 P_2(\mu)\}$, $\mu = \cos\vartheta$, $R_0 = 1.4 \cdot A^{1/3} \cdot 10^{-13}$ cm. The parameters α_2, β, and γ depend on R_0, Z, the decay energy E and the moment of inertia of the daughter nucleus I. V. M. Strutinskiy (Ref 2) obtained the formula $w_J = (2J+1)\left|\int_{-1}^{1} \chi'(\mu)P_J(\mu)d\mu\right|^2 \Big/ \left|\int_{-1}^{1} \chi'(\mu)d\mu\right|^2$, where $\chi'(\mu)$ denotes the wave function on the internal spherical surface S', the radius of which is $R' = 2Ze^2/E - R_0$. Further, $w'_J = e^{-\beta' J(J+1)} w_J$ is obtained if the two above formulas are compared. These formulas are discussed in the following. By means of the first-mentioned formula, when χ' = const, and if the probability of the excitation of the 2^+-level has been experimentally found, Nosov calculated the quadrupole deformation α_2 for 22 even-even daughter nuclei. For these 22 isotopes the values of

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$\Delta E(\Delta E = 5\hbar^2/I)$, α_2^H, $\alpha_2^C e^{-6\delta'}$, and α_2' are given by a table. Calculation of these values is discussed. The author finally thanks A. S. Kompaneyets for discussions and T. V. Novikova for assisting in the computations. There are 1 table and 3 references, 2 of which are Soviet.

SUBMITTED: June 1, 1959

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AUTHOR: Nosov, V. G.

TITLE: Theory of Alpha Decay of Non-spherical Nuclei

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1960, Vol. 39, No. 1(7), pp. 141-148

TEXT: The author develops a consistent theory of α-decay of non-spherical nuclei; the theory is based upon the corresponding generalization of the quasi-classical approximation of quantum mechanics. It is essential for the theory that the wave function of the parent nucleus is representable in the form $\Psi = \sum_{ik} \psi_{ik}(\vec{r},\omega)\varphi_i^{\alpha}\varphi_k$, where φ_i^{α} and φ_k are the wave functions of the steady states of the internal motion of the α-particle and the daughter nucleus, respectively. The expansion coefficients ψ_{ik} are functions of the radius vector $\vec{r}$ of the α-particle with respect to the center of mass of the daughter nucleus and of the Euler angles ω characterizing the orientation of the non-spherical daughter nucleus. The formula applies

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Theory of Alpha Decay of Non-spherical Nuclei

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both inside and outside the daughter nucleus, but the ψ_{ik} in these two regions behave quite differently. In the introduction, the author discusses the conditions in these two regions in detail. Section 2 gives the deriyation of alpha-decay probability formulas. Among other things, the following relation is obtained:

$w_{J'1}/w_{J1} = (C^{J'K}_{\Omega K l_0}/C^{JK}_{\Omega K l_0})^2 \exp(-\gamma_E \Delta E_{J'J})$, where $\Delta E_{J'J} = (\hbar^2/2I)\cdot[J'(J'+1) - J(J+1)]$ is the distance between the rotational levels with the momenta, J' and J; $\gamma_E = 1/E(\varkappa_b^2 R_o/k \arctan \varkappa/k + \varkappa R_o$, $k = \sqrt{2mE'}/\hbar$ and $\varkappa = \sqrt{\varkappa_b^2 - k^2}$. The total excitation probability of a rotational level with J is obtained as: $w_J = \exp(-\gamma_E \Delta E) \sum'_{l=|J-\Omega|}^{J+\Omega} B_l (C^{JK}_{\Omega K l_0})^2 |\tilde{\chi}_l|^2 \Big/ \sum'_{l=0}^{2\Omega} B_l (C^{\Omega K}_{\Omega K l_0})^2 |\tilde{\chi}_l|^2$. $\sum'$ means that summation is carried out only over even l. In the last section, the angular distribution of α-particles emitted by oriented nuclei is investigated, and several formulas are given. The author thanks A. S. Kompaneyets, Ya. A. Smorodinskiy, Ye. L. Feynberg, and I. S. Shapiro for discussions. There are 11 references: 6 Soviet, 3 Danish, 2 US, 2 German, and 1 British.

SUBMITTED: February 15, 1960

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KOCOV, V. S., Dr. Phys-Math Sci — (diss) "Alpha-[illegible] of non-spherical nuclei", Moscow, 1960, 15 pp (Physics Institute imeni P. N. Lebedev of the Academy of Sciences USSR)

(KL, 38-60, 105)

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S/056/60/039/006/032/063
B006/B056

AUTHOR: Nosov, V. G.

TITLE: Determination of the Deformation of α-Active Nuclei and Their Quadrupolarization on the Basis of the Alpha Particle Energy- and Angular Distributions

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1960, Vol. 39, No. 6(12), pp. 1660-1667

TEXT: The author used a theory developed by him in earlier studies (Refs. 1-3) concerning the alpha decay of non-spherical nuclei for the treatment of experimental data on the relative fine structure line intensities of the α-rays and the deformation of daughter nuclei (the sign of the deformation, the course of the quadrupole deformation, the excitation of the 4^+-level and the 2^4 total deformation α_4, as well as relations not connected with deformation), the half-lives, internal probabilities, and the radii of daughter nuclei as well as the angular distribution of the alpha particles emitted by oriented nuclei, and the

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Determination of the Deformation of α-Active Nuclei and Their Quadrupolarization on the Basis of the Alpha Particle Energy- and Angular Distributions

quadrupolarization of parent nuclei. (By quadrupolarization, the degree of orientation of parent nuclei is understood). The dependence of the nuclear deformation on atomic weight is derived for the range $A > 220$ of fine structure data. It may be shown that, if the effect of these deformations upon the half-lives is taken into account, the discrepancies between the variation of the radii of alpha-active nuclei and the predictions of the alpha-decay theory may be eliminated. It is shown how, from the angular distributions of alpha particles in suitable experiments, the quadrupolarization of U^{233} parent nuclei can be determined. Numerical comparisons between experiment and theory are satisfactory and prove the applicability of the theory developed in Refs. 1-3. The A-dependence of the deformation parameter α_2 for the elements of $88 \leq Z \leq 98$ is illustrated in Fig. 2 for $r_0 = 1.4 \cdot 10^{-13}$ cm. Following this, various recommendations for carrying out decay experiments are discussed, the author basing, above all upon what is conveyed by Fig. 2. Ye. L. Feynberg is thanked for discussions, A. G. Zelenkov and G. Ye. Kocharov for discussing experimental problems, and L. A. Martynov and T. V. Novikova for their help in constructing

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Determination of the Deformation of α -Active Nuclei and Their Quadrupolarization on the Basis of the Alpha Particle Energy- and Angular Distributions

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tables and diagrams. There are 2 figures, 4 tables, and 13 references: 8 Soviet, 1 Dutch, and 4 US.

SUBMITTED: May 31, 1960

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S/056/62/043/005/028/058
B102/B104

AUTHORS: Nosov, V. G., Yakovleva, I. V.

TITLE: Depolarization of μ^+ mesons in solids

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 43, no. 5(11), 1962, 1750 - 1764

TEXT: On the basis of weak-interaction considerations of the $\mu^+ - e^+$ decay of completely polarized muons, the positron angular distribution should have the form $1 - \frac{1}{3}\cos\vartheta$ (with respect to the direction of flight of μ^+). Actually the anisotropy of this decay is much weaker, because of μ^+ depolarization in the matter. This depolarization is mainly attributed to muonium production; if, however, μ^+-e spin contact interaction is considered it becomes clear that muonium production will not be the only effect that plays a role in μ^+ depolarization. Here the depolarization effects are analyzed and a phenomenological theory is developed which takes account also of the presence of an external magnetic field. The theory is based on the assumption that, irrespective of contact interaction, the electron of the

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B102/B104

Depolarization of μ^+ mesons in solids

muonium is depolarized in the matter, i.e. it shows a kind of spin flip with the characteristic frequency ν. From the expressions derived for the components of the muonium spin density matrix the time dependence of μ^+ polarization is calculated. With the dimensionless parameter $x = \omega'/\omega_0 = H/H_0$ for rapid relaxation of the electron spin ($\nu \gg \sqrt{\omega_0^2 + \omega'^2}$)

$$P = \int_0^\infty P(t)\, e^{-t/\tau} \frac{dt}{\tau} = \frac{1}{1 + \omega_0^2 \tau/4\nu}. \qquad (11)$$

and for slow relaxation ($\nu \ll \sqrt{\omega_0^2 + \omega'^2}$)

$$P = \int_0^\infty P(t)\, e^{-t/\tau} \frac{dt}{\tau} = \frac{1 + 2x^2}{2(1 + x^2 + \nu\tau)}; \qquad \sqrt{\omega_0^2 + \omega'^2}\,\tau \gg 1. \qquad (16)$$

is obtained. τ is a characteristic time during which the μ^+ meson is decelerated. For a photographic emulsion

$$P = f \frac{1 + 2x^2}{2(1 + x^2)\nu} + (1 - f) \frac{1 + 2x^2}{2(1 + x^2 + \nu\tau)}. \qquad (17)$$

wherein f is the fraction of μ^+ mesons decelerated in the gelatin.

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