BUKHARIN, Nikolay Arkad'yevich; GOLYAK, Vladimir Kuz'mich; NOSOV, N.A., dots., retsenzent; FETISOV, M.M., dots., red.; MITARCHUK, G.A., red. izd-va; SHCHETININA, L.V., tekhn. red.

[Use of electric measurement methods for testing automobiles] Ispytanie avtomobilia s ispol'zovaniem elektricheskikh metodov izmereniia. 2. izd., perer. i dop. Moskva, Mashigz, 1962. 226 p. (MIRA 15:5)

(Automobiles--Testing) (Electric measurements)

FETISOV, M.S., inzhener

Adaptability of designs of metal props to variations in the thickness of coal seams. Ugol' 30 no.10:24-28 O'55. (MLRA 8:12)

1. Kombinat Rostovugol'
(Mine timbering)

GAYDUKOV, V.I.; IL'SHTEYN, A.M.; FETISOV, M.S.

Studying rock pressure in mines of the Moscow Basin. Fiz.-mekh.-svois.,dav.i razr.gor.porod no.1:61-85 '62. (MIRA 16:3)
(Moscow Basin—Rock pressure)

DATSENKO, Makar Fedorovich; FETISOV, M.V.

[Local anesthetics of the maxillo-facial areas]Mistseve obezboliuvannia v shchelepno-lyts'ovii diliantsi. Kyiv, Derzhmedvydav, URSR, 1959. 163 p. (MIRA 16:1)
(LOCAL ANESTHESIA) (JAWS)

FETISOV, N., prof.; TITAREV, V., dotsent

Fourth Republic Conference of the Stomatologists of the Moldavian S.S.R. Stomatologiia 43 no.1:110 Ja-F'64
(MIRA 17:4)

AUTHOR: Fetisov, N. G. SOV/32-24-10-58/70

TITLE: A Semiautomatic Apparatus for the Stringing of Smalls on the Electrodes of Thermocouples (Poluavtomat dlya nanizyvaniya bus na elektrody termopar)

PERIODICAL: Zavodskaya Laboratoriya, 1958, Vol 24, Nr 10, pp 1287-1288 (USSR)

ABSTRACT: A semiautomatic mechanism was constructed for the stringing of porcelain smalls onto the electrodes of thermocouples; this apparatus increases the productivity of this process by 5-7 times. The construction is simple and can be carried out at any pyrometric works laboratory. A diagram and a description of this apparatus are given. From them it may be seen that a synchronous motor of the type SD-2 is used to move the vibrator. An electric signal of an automobile dynamo of the type 620 B operating with 6 volts is used as vibrator. The feed of the synchronous motor and of the vibrator is arranged by way of a transformer of 220/12 volts. The semiautomatic mechanism described has been working continuously for two years.
There is 1 figure.

Card 1/2

A Semiautomatic Apparatus for the Stringing of Smalls on the Electrodes of Thermocouples

SOV/32-24-10-58/70

Card 2/2

FETISOV, N. I., Cand of Phys-Math Sci -- (diss) Neutron sepctra of a non-rlexibile dispersiwe I^{238}," Moscow, 1957, 11 pp (Main Administration for the Utilization of Atomic Energy unde r the Council of Ministers USSR, Physics Institute), 115 copies (KL, 35-57, 105)

FETISOV, N.I.

89-9-3/32

AUTHOR FETISOV, N.I.

TITLE The Spectrum of Neutrons Inelastically Scattered by U^{238}.
(Spektry neytronov, neuprugo rasseyannykh U^{238})

PERIODICAL Atomnaya Energiya, 1957, Vol 3, Nr 9, pp 211-214 (USSR)

ABSTRACT By means of a Wilson chamber the spectrum of the scattered neutrons was recorded (about 1200 pictures were evaluated). A target of "heavy" ice was used as a neutron source, which was bombarded with accelerated deuterons. The average energy of the primary neutrons amounted to 2,5 and 3,5 MeV. As a scattering substance a spherical uranium layer of 18 mm thickness was used, where the target center coincided with the scattering center. The energy distribution of the inelastically scattered neutrons - measured in the interval range of from 100 to 1300 KeV - can be well represented by the statistical theory. For the 2,5 MeV primary neutrons the most probable scattering energy of the secondery neutrons is within the range of 275 KeV; for 3,5 MeV neutrons it shifte towards 375 KeV.

CARD 1/2

Fetisov, N. I.

SOV/89-5-3-7/15

AUTHORS: Leypunskiy, A. I., Abramov, A. I., Andreyev, V. K., B..ysnnikov, A. I., Bondarenko, I. I., Galkov, V. I., Golubev, V. I., Gul'ko, A. D., Guseynov, A. G., Kazachkovskiy, O. D., Kozlova, N. V., Krasnoyarov, N. V., Kuz'minov, B. D., Morozov, V. N., Nikolayev, M. N., Smirenkin, G. N., Stavisskiy, Yu. Ya., Ukraintsev, F. I., Usachev, L. N., Fetisov, N. I., Sherman, L. Ye.

TITLE: Investigations of the Physics of Reactors With Fast Neutrons.II (Issledovaniya po fizike reaktorov na bystrykh neytronakh) (Continued from abstract 6/15)

PERIODICAL: Atomnaya energiya, 1958, Vol. 5, Nr 3, pp. 284-295 (USSR)

ABSTRACT: The reactivity and the kinetics of the reactor were measured. It could be shown that in the center of the active zone the weight of the 5 MeV neutrons is higher by ~15% than that of 250 MeV neutrons. The effective yield of the delayed neutrons in the reactor with a uranium shield exceeds that of a reactor with a copper shield by 1,4 times its amount.
Reactor [illegible]-5:
The active plutonium zone is the same as in reactor БР-1. In the center of the reactor a water-uranium channel is provided, which is separated from the plutonium zone by a uranium layer

Card 1/3

of 8 cm thickness. The uranium-water lattice consists of cylindrical slugs of normal uranium, which have a diameter of 35 mm. The canning material is aluminum. The ratio between water and uranium is 0,35. The lattice spacing is 40 mm. Measurements carried out with the water-uranium lattice instead of with the pure uranium layer showed:

1) The conversion factor is reduced from 2,45 ± 0,10 to 1,7 ± 0,2.
2) In the case of a fixed power output of the active zone the velocity with which the total quantity of plutonium 239 and uranium 235 is formed was increased by 35%.
3) The velocity with which plutonium is produced increases by 1,8 times its amount.
4) In the case of a fixed power output of the active zone the total power output of the reactor is increased by 2,2 times its amount.

Reactor [illegible]-2:
This reactor was described more in detail in references 12 and 13. Its nominal power output is 120 kW, the maximum output is 200 kW. In the active zone of the reactor БР-2, which consists of plutonium rods, mercury is used as a coolant, which takes up

Card 2/3

~17% of the total volume of the active zone. The regulating rods (interior of shield) are made from a copper-nickel alloy. The external shield consists of uranium slugs canned with stainless steel. Thickness ~25 cm. The uranium shield is surrounded by copper of 15 cm thickness.
The presence of mercury in the active zone leads to a decrease of the content of fast neutrons in the spectrum. The conversion factor was 1,6 ± 0,2.
Theoretically the kinetic equation for this reactor was calculated by G. I. Marchuk according to the method developed by V. S. Vladimirov. Theoretical calculation of the critical mass was carried out with an error of 4%, and that of the effectiveness of the regulating rods with an error of 6%. The effective yield of the delayed neutrons was found to amount to 0,27%, while the experimental value was 0,24 ± 0,04%. There are 7 figures, 1 table, and 13 references, 9 of which are Soviet.

Card 3/3

Fetisov, N.I.

21(4) PHASE I BOOK EXPLOITATION SOV/2583

International Conference on the Peaceful Uses of Atomic Engergy. 2nd, Geneva, 1958.

Doklady sovetskikh uchenykh; yadernyye reaktory i yadernaya energetika. (Reports of Soviet Scientists; Nuclear Reactors and Nuclear Power) Moscow, Atomizdat, 1959. 707 p. (Series: Its: Trudy, vol. 2) Errata slip inserted. 8,000 copies printed.

General Eds.: N.A. Dollezhal, Corresponding Member, USSR Academy of Sciences, A.K. Krasin, Doctor of Physical and Mathematical Sciences, A.I. Leypunskiy, Member, Ukrainian SSR Academy of Sciences, I.I. Novikov, Corresponding Member, USSR Academy of Sciences, and V.S. Fursov, Doctor of Physical and Mathematical Sciences; Ed.: A.P. Alyab'yev; Tech. Ed.: Ye. I. Mazel'.

PURPOSE: This book is intended for scientists and engineers engaged in reactor designing, as well as for professors and students of higher technical schools where reactor design is taught.

COVERAGE: This is the second volume of a six-volume collection on the peaceful use of atomic energy. The six volumes contain the reports presented by Soviet scientists at the Second International Conference on Peaceful Uses of Atomic Energy, held from September 1 to 13, 1958 in Geneva. Volume 2 consists of three parts. The first is devoted to atomic power plants under construction in the Soviet Union; the second to experimental and research reactors, the experiments carried out on them, and the work to improve them; and the third, which is predominantly theoretical, to problems of nuclear reactor physics and construction engineering. Yu. I. Koryakin is the science editor of this volume. See SOV/2081 for titles of all volumes of the set. References appear at the end of the articles.

PART II. EXPERIMENTAL AND RESEARCH REACTORS

PART III. PHYSICS AND ENGINEERING OF REACTOR DESIGN

199

ANUFRIYENKO, V.B.; DEVKIN, B.V.; KOTEL'NIKOVA, G.V.; KULABUKHOV, Yu.S.; LOVCHIKOVA, G.N.; SAL'NIKOV, O.A.; TIMOKHIN, L.A.; TRUBNIKOV, V.R.; FETISOV, N.I.

Inelastic scattering of 14 Mev. neutrons and the nuclear level density. IAd. fiz. 2 no.5:826-838 N '65.

(MIRA 18:12)

L 36074-66 EWT(m)/EWP(t)/ETI IJP(c) JD/JG
ACC NR: AT6015891 SOURCE CODE: UR/3158/65/000/030/0002/0018

AUTHOR: Sal'nikov, O. A.; Fetisov, N. I.; Lovchikova, G. N.; Kotel'nikova, G. V.; Anufriyenko, V. B.; Devkin, B. V.

ORG: Physico-energetic Institute (Fiziko-energeticheskiy institut)

TITLE: Nuclear level density and spectral distribution of inelastically scattered neutrons of 14.1 Mev initial energy

SOURCE: Obninsk. Fiziko-energeticheskiy institut. Doklady, FEI-30, 1965. Spektry neuprugo rasseyannykh neytronov s nachal'noy energiyey 14, 1 Mev i plotnost' yadernykh urovney, 2-18

TOPIC TAGS: neutron scattering, nuclear energy level, neutron spectrum, excitation energy, Fermi gas

ABSTRACT: The purpose of this work is to obtain a better representation of the functional dependence of the temperature of nuclei and the nuclear level density parameters on the mass number A, the reaction (n,n') and the neutron spectrum in the reaction $(n,2n)$. The measured values of the nuclear level density parameters a, a' and a'' are presented in tabular form. In addition, a table gives the calculated values of the temperature T_N and T_1, according to the Fermi model of the nucleus. The spectra of the secondary neutrons in the reaction $(n,2n)$ were calculated using the equation

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ACC NR: AT6015891

$$N(E) = \text{const. } E \exp(-E/T_N)$$

All above measurements were evaluated for 14 target nuclei: Be, Na, Mg, S, K, Ca, Sr, Tn, Sb, J, Cs, Ce, Ta, Hg. Conclusion: (a) The linear dependence of $\ln(N/E)$ on E shows that the scattering represents 80% of the reaction with the formation of the compound nucleus. Further, the direct interaction plays an essential role in the case of neutrons with small transfer momentum in the scattering. (b) The observed change in the temperature of nuclei with the excitation energy agrees well with the Fermi gas model in the region from 2 to 10 Mev. The same applies to the temperature change with the mass number A. (c) An increase in the level density is observed as a function of the mass number A, except for nuclei near those with closed shells. Orig. art. has: 10 figures, 3 tables, 7 formulas.

SUB CODE: 20/ SUBM DATE: none/ ORIG REF: 004/ OTH REF: 013

LS

Card 2/2

L 20720-66 EWT(1)/EWT(m)/ETC(m)-6 DIAAP/IJP(c) WW

ACC NR: AP6007812 SOURCE CODE: UR/0120/66/000/001/0053/0061

AUTHOR: Anufriyenko, V. B.; Devkin, B. V.; Ivanov, A. A. Kotel'nikova, G. V.; Kulabukhov, Yu. S.; Lovchikova, G. N.; Sal'nikov, O. A.; Timokhin, L. A.; Fetisov, N. I.

ORG: Institute of Physics and Power Engineering, GKAE (Fiziko-energeticheskiy institut GKAE)

TITLE: Neutron transit-time spectrometer

SOURCE: Pribory i tekhnika eksperimenta, no. 1, 1966, 53-61

TOPIC TAGS: spectrometer, neutron spectrometer

ABSTRACT: A new fast-neutron transit-time spectrometer is described which can measure a neutron spectrum from 100 kev to 14 Mev. Monochromatic 14-Mev neutrons are produced by a $T^3(d, n)He^4$ reaction; deuteron energy, 250 kev; deuteron-pulse duration, 7 nsec; beam interruption before acceleration is used (sketch supplied). The neutron detector and electronic equipment are briefly described. The spectrometer resolution determined from a δ-peak is 4 nsec/m; channel width, 2.12 nsec; integral nonlinearity, 0.2%. From a time-to-pulse-height converter, the signals are fed to a 256-channel analyzer. The resolution time is 8 nsec; transit base, 2 m; linear dynamic range, 400 nsec. The photomultiplier is equipped with a noise-elimination device, and the detector is well protected from the background noise,

Card 1/2

UDC: 539.1.078:539.125.5

ACC NR: AP6007812

8

both features ensuring a high effect-to-background ratio when 100-kev neutrons are measured. The spectrometer operation is illustrated by a spectrum of neutrons inelastically scattered by Mn."In conclusion, the authors wish to thank B. S. Novikovskiy and Ye. P. Ukraintseva for tending the accelerator operation, V. G. Zolotukhin for discussing the spectrometer efficiency, and N. S. Biryukov, M. D. Bityutskaya, V. A. Rumyantseva, A. M. Trufanov, and Ye. S. Chernichenko for their part in measurements and data processing." Orig. art. has: 9 figures and 3 formulas.

[03]

SUB CODE: 18, 09 / SUBM DATE: 11Jan65 / ORIG REF: 004 / OTH REF 006/ ATD PRESS: 4223

Card 2/2

FETISOV, N. M.

The testing of mercury arc rectifier units Moskva, Gos. transp. zhel-dor. izd-vo, 1940. 177 p. (Nauchno-issledovatel'skii institut zheleznodorozhnogo transporta. Izdaniia vyp. 90) (52-46561)

TK2798.F4

FETISOV, N. M.

USSR (600)

Electric Railroads - Substations

Mercury-rectifying units with network control for traction substations. Trudy TSNII MPS, No. 7, 1947.

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

KRIVOSHEYEV, A.Ye.; FETISOV, N.M.

Foundry properties of graphitic steel. Lit.proizv. no.11:30-31 N '61. (MIRA 14:10)

(Steel--Thermal properties)
(Foundries--Equipment and supplies)

KRIVOSHEYEV, A.Ye.; POGREBNOY, E.N.; PETISOV, N.M.

Inoculation of steel undergoing graphitization. Lit.proizv. no.11:28-29 N '62. (MIRA 15:12)
(Steel—Metallurgy)

S/276/63/000/003/005/006
A004/A127

AUTHORS: Krivosheyev, A. Ye., Pogrebnoy, E. N., Fetisov, N. M.

TITLE: The effect of modification on the structure and mechanical properties of cast steel being graphitized

PERIODICAL: Referativnyy zhurnal, Tekhnologiya mashinostroyeniya, no. 3, 1963, 6, abstract 3G42 ("Sb. nauchn. tr. Dnepropetr. metallurg. in-t", 1962, no. 49, 165 - 174)

TEXT: Modifying additions effectively affect the structure of cast and annealed graphitized steel. In the complex modification of steel by aluminum + calcium silicon + boron, the boron additions that are added for increasing the hardenability should not exceed 0.01%. Boron additions of more than 0.01% can only be recommended for castings whose ductility may be reduced at high demands made on their hardenability and wear resistance during operation.

[Abstracter's note: Complete translation]

Card 1/1

KRIVOSHEYEV, A.Ye.; FETISOV, N.M.

Effect of the thermal resistance of foundry molds on the formation of shrinkage cavities in steel castings. Izv.vys.ucheb.zav.; chern. met. 6 no.1:160-166 '63. (MIRA 16:2)

1. Dnepropetrovskiy metallurgicheskiy institut.
(Steel castings—Defects)
(Foundries—Equipment and supplies)

PETISOV, N.S. (Ivanovo)

Electromagnetic counter for pulse registration. Klin.med. 36 no.5 145-146 My '58 (MIRA 11:7)

(PULSE,
registration, electromagnetic counter (Rus))

S/194/61/000/001/014/038
D216/D304

AUTHOR: Fetisov, N.S.

TITLE: The use of barium-titanate in pulse registering probe

PERIODICAL: Referativnyy zhurnal. Avtomatika i radioelektronika, no. 1, 1961, 6, abstract 1 E49 (Med. prom-st' SSSR, Vol. 14, no. 5, 1960, 50-52)

TEXT: A thorough survey of existing probes for pulse registration is given with a description of the construction of a probe using barium titanate bi-morphous element (taken from the sound analyzer ЭПК-56 (EPK-56)). Electrical pulse-oscillograms, when using the device, are given. 14 references

Ivanovskiy Medical Inst.

Card 1/1

FETISOV, N.S.

Piezomagnetic recorder for the registration of ballistocardiograms.
Klin. med. 38 no. 2:143-145 F '60. (MIRA 14:1)
(BALLISTOCARDIOGRAPHY)

FETISOV, N.S.

Gallop rhythm in slowly developing recurrent rheumatic carditis. Kardiologiia 5 no.2:76-77 '63 (MIRA 17:2)

1. Iz kafedry gospital'noy terapii (zav. - prof. Ye.S.Myasoyedov) Ivanovskogo meditsinskogo instituta.

FETISOV, Nikolay Vasil'yevich.

Kiev Medical Stomatological Inst. Academic degree of Doctor of Medical Sciences, based on his defense, 30 December 1954, in the Council of the Kiev Order of Labor Red Banner Medical Inst imeni Bogomolets, of his dissertation entitled: "Variations in the Operative Approach to a Temporal Depression."

Academic degree and/or title: Doctor of Sciences

SO: Decisions of VAK, List no. 10, 30 Apr 55, Byulleten' MVO SSSR, No. 15, Aug 56, Moscow, pp. 5-24, Uncl. JPRS/NY-537

FETISOV, N.V., professor (Kiyev)

Extraoral conduction anesthesia. Probl. stom. 3:251-256 '56 (MLRA 10:5)
(LOCAL ANESTHESIA) (ANESTHESIA IN DENTISTRY)

FETISOV, N.V., professor (Kiyev)

Materials from craniometric studies. Probl. stom. 3:295-298 '56 (MLRA 10:5)

(CRANIOMETRY)

FETISOV, N.V., professor (Kiyev)

Surgical access to the infra temporal fossa. Probl. stom. 3:299-302 '56 (MLRA 10:5)

(HEAD--SURGERY)

BELITSER, V.A., prof. (Kiyev); FETISOV, N.V., prof. (Kiyev); DEMIN, V.I., kand.biol.nauk (Kiyev); POKOTILO, Ye.D., kand.med.nauk (Kiyev)

Significance of the complex of B vitamins in the treatment of paradentosis. Probl.stom. 4:237-240 '58. (MIRA 13:6)
(VITAMINS--B, ETC.--THERAPEUTIC USE)
(GUMS--DISEASES)

FETISOV, N.V., prof.

Innervation of Filatov's flap in the process of its migration. Stomatologiia 38 no.5:33-35 S-O '59. (MIRA 13:3)

1. Iz kafedry khirurgicheskoy stomatologii (zaveduyushchiy - prof. N.V. Fetisov) Kiyevskogo meditsinskogo instituta (direktor - dotsent I.P. Alekseyenko).

(TISSUES--TRANSPLANTATION)

FETISOV, N.V., prof.

Some problems concerning the application of mathematical methods in surgical stomatology. Nek.filos.vop.med.i est. no.2:168-179 '60.
(MIRA 15:7)

1. Kafedra khirurgicheskoy stomatologii Kiyevskogo meditsinskogo instituta imeni Bogomol'tsa.
(STOMATOLOGY)

FETISOV, N.V.

Noninjection method of skin anesthesia. Probl. stom. 5:237-240 '60.
(MIRA 15:2)

1. Kiyevskiy meditsinskiy institut.
(LOCAL ANESTHESIA)

FETISOV, N.V.

Vascularization and innervation of Filatov's grafts. Probl. stom. 5: 308-314 '60. (MIRA 15:2)

1. Kiyevskiy meditsinskiy institut.
(SKIN GRAFTING) (NERVOUS SYSTEM) (BLOOD VESSELS)

FETISOV, N.V., prof.

Surgical correction of congenital deformations of the alae and apex nasi. Stomatologiia 40 no.3:33-36 My-Je '61. (MIRA 14:12)

1. Iz kafedry khirurgicheskoy stomatologii (zav. - prof. N.V.Fetisov) Kiyevskogo meditsinskogo instituta imeni akademika A.A.Bogomol'tsa (dir. - dotsent V.D.Bratus').
(NOSE--SURGERY)

FETISOV, Nikolay Vasil'yevich; DATSENKO, Makar Fedorovich; SHOYMER,A., red.

[Anesthesia in surgery on the maxillofacial region] Obezbolivanie pri operatsiiakh na cheliustno-litsevoi oblasti. Kishinev, Kartia moldoveniaske, 1965. 241 p. (MIRA 18:11)

1. OKOL'NIKOV, A.; FETISOV, P.
2. USSR (600)
4. Shipbuilding
7. Let's be ready for sailing on time. V pom. profaktivu 14, No. 3, 1953.

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

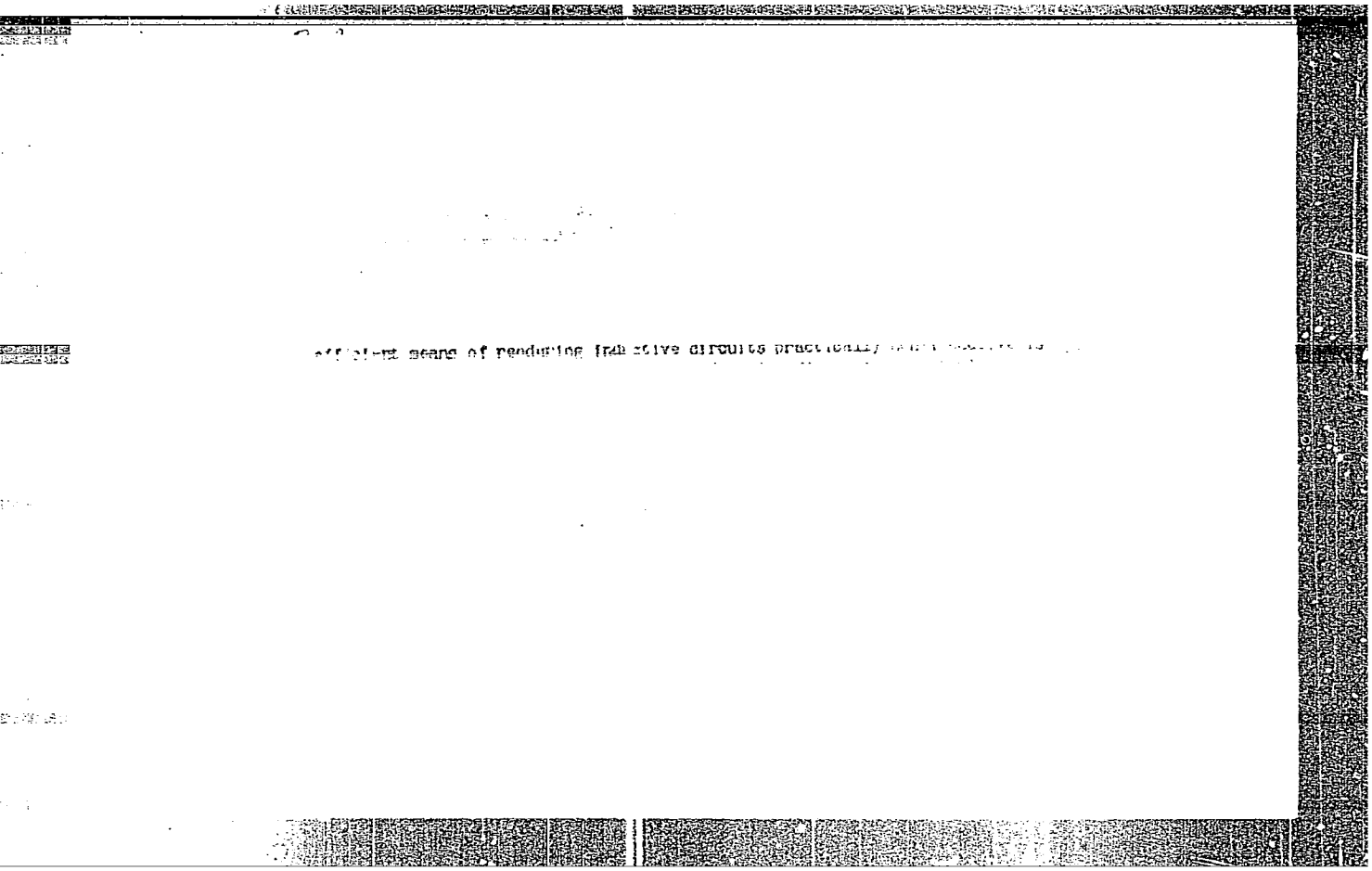
FETISOV, P., kand.tekhn.nauk

Fluorescent lighting. Pozh.delo 7 no.8:7 Ag '61. (MIRA 14:8)
(Fluorescent lighting)

FETISOV, P., kand.tekhn.nauk, starshiy nauchnyy sotrudnik

Construction shortcomings caused the fire. Pozh.delo 8 no.2:13 F '62. (MIRA 15:2)

1. TSentral'nyy nauchno-issledovatel'skiy institut protivopozharnoy oborony.
(Electric power plants—Fires and fire prevention)



FETISOV, P., inzhener; FEDORENKO, V., inzhener.

Fireproof electric water heater. Pozh.delo 3. no.2:27 F '57.
(MLRA 10:4)
(Water heaters)

PETISOV, P. A.

Automatic multi-cutouts. Pozh.delo 3 no.4:19-20 Ap '57.
(MIRA 10:7)

1. Starshiy nauchnyy sotrudnik TSentral'nogo nauchno-issledovatel'skogo instituta protivopozharnoy oborony.
(Electric cutouts)

8(2)

AUTHOR: Fetisov, P. A., (Moscow) SOV/105-58-11-17/28

TITLE: A Rapid Method of Estimating the Danger of Electrical Sparkover(Metod uskorennoy otsenki opasnosti elektricheskogo iskreniya)

PERIODICAL: Elektrichestvo, 1958, Nr 11, pp 74 - 78 (USSR)

ABSTRACT: This paper gives an account of the study of spark ignition in vapor- and gas-air mixtures. The method of estimating the danger of spark ignition is based upon the following facts: The inflammation probability versus igniting current function P= f(I) showed for all mixtures under investigation, including methane, that 1) the probability curve of mixture ignition by an electric spark does not only apply to methane, but also to all other gas- and vapor-air mixtures, and that its shape is independent of the physical and chemical properties of the mixture in question. 2) The curve pertaining to one specific mixture takes a definite place in the probability diagram with respect to the

Card 1/3

curves for other mixtures. This position decides upon the ignition susceptibility of the mixture. 3) The inflammation probability curves take for all mixtures considered in this paper a practically parallel course. They exhibit an almost identical slope. 4) The function I= f(L), L denoting the inductivity in the ignition circuit, takes for all mixtures investigated the same place in the diagram. A mathematical relation between the ignition current, the inductivity and the slope of the inductivity versus inflammability curves was determined. The regularities discovered in this work provided data for the establishment of calculation formulae and nomograms. This new method permits to plot the characteristic curves of sparkover safety in the voltage range up to 60 V and in the inductivity region up to 1 H after one or two experimental points have been determined (instead of 15-20 points, which are required by methods used at present). The accuracy of the results is absolutely sufficient for practical purposes. The

differences between the amperages obtained by calculation and by experiment varies between 4 and 5,5%. There are 4 figures, 5 tables, and 4 Soviet references.

SUBMITTED: June 5, 1958

FETISOV, Petr Afinogenovich, inzh.; SHESTAKOV, A.L., red.; OTOCHEVA, M.A., red.izd-va; SALAZKOV, N.P., tekhn.red.

[Explosion hazard in gas mixtures, caused by electric sparks] Vzryvoopasnost' elektricheskogo iskreniia v gazovykh smesiakh. Moskva, Izd-vo M-va kommun.khoz.RSFSR, 1959. 76 p. (MIRA 12:12)
(Explosions)

KHORUNZHIY, V.A., red.; RIBAS, Yu.M., red.; BORISEVICH, Z.S., red.; VERTYACHIKH, V.G., red.; KOST'YEV, N.K., red.; MOVSESOV, N.S., red.; ZHIGULIN, Yu.V., red.; RAKOVICH, I.I., red.; RUVINSKIY, V.A., red.; TULIN, V.S., red.; FETISOV, P.A., red.; FILIMONOV, P.V., red.; IGLITSYN, I.L., red.; LARIONOV, G.Ye., tekhn.red.

[Rules for the manufacture of explosion-proof electric equipment] Pravila izgotovleniia vzryvozashchishchennogo elektrooborudovaniia. Moskva, Gos.energ.izd-vo, 1960. 54 p. (MIRA 13:11)

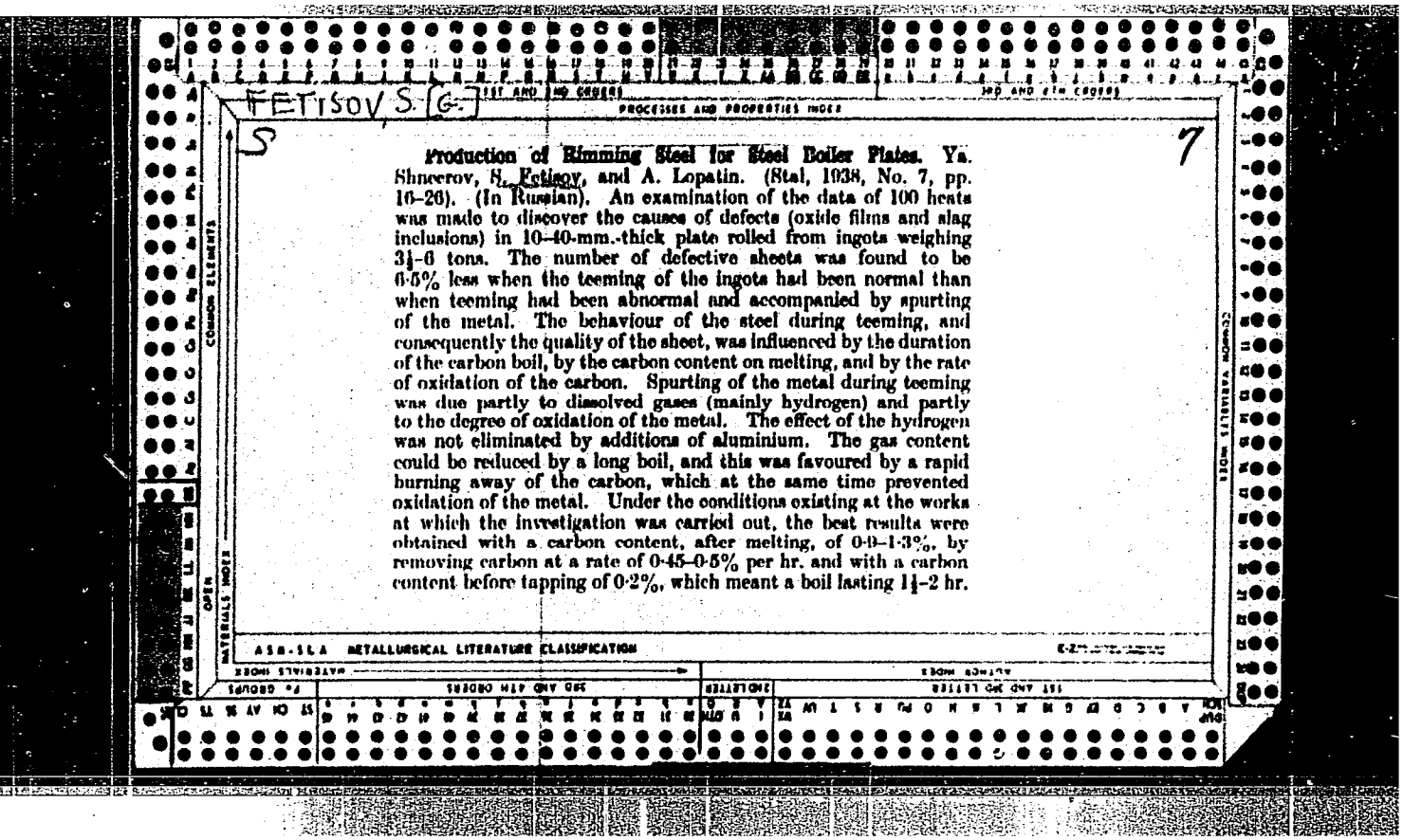
1. Russia (1923- U.S.S.R.) Gosudarstvennyy komitet po avtomatizatsii i mashinostroyeniyu.
(Electric apparatus and appliances)

FETISOV, P.A., kand.tekhn.nauk; SMELKOV, G.I., inzh.

Increasing the quality of the contact connections of aluminum wires. Prom. energ. 20 no.11:22-23 N '65.
(MIRA 18:11)

FETISOV, S.G. and SHNEYERIV, Ya.A.

"The Technological and Organizational Foundation of the Records Achieved by Makar Mazay, the Steel Maker", Stal' /Steel/, No 4/5, 1937.



FETISOV, S. G.

S 7

Production of Rimming Steel for Steel Boiler Plates. Ya. Shneerov, S. Fetisov, and A. Lopatin. (Stal, 1938, No. 7, pp. 16–26). (In Russian). An examination of the data of 100 heats was made to discover the causes of defects (oxide films and slag inclusions) in 10–40-mm.-thick plate rolled from ingots weighing 3½–6 tons. The number of defective sheets was found to be 6·5% less when the teeming of the ingots had been normal than when teeming had been abnormal and accompanied by spurting of the metal. The behaviour of the steel during teeming, and consequently the quality of the sheet, was influenced by the duration of the carbon boil, by the carbon content on melting, and by the rate of oxidation of the carbon. Spurting of the metal during teeming was due partly to dissolved gases (mainly hydrogen) and partly to the degree of oxidation of the metal. The effect of the hydrogen was not eliminated by additions of aluminium. The gas content could be reduced by a long boil, and this was favoured by a rapid burning away of the carbon, which at the same time prevented oxidation of the metal. Under the conditions existing at the works at which the investigation was carried out, the best results were obtained with a carbon content, after melting, of 0·9–1·3%, by removing carbon at a rate of 0·45–0·5% per hr. and with a carbon content before tapping of 0·2%, which meant a boil lasting 1½–2 hr.

A S M - S L A METALLURGICAL LITERATURE CLASSIFICATION

FETISOV, S. G.

Fetisov, S. G. and Dorokhov, V. I. "The eliquation of steel on chromium bottoms," Trudy Stalinskogo obl. otd-niya VNITOM, No 1, 1949, p. 46-48

SO: U-5241, 17 December 1953, (Letopis 'Zhurnal 'nykh Statey, No. 26, 1949)

MOLOTKOV, V.A.; FETISOV, S.G.

Investigating the nonuniformity of alloyed steel slab ingots. Izv. vys.ucheb.zav.; chern.met. 4 no.9:71-78 '61. (MIRA 14:10)

1. Zhdanovskiy metallurgicheskiy institut.
(Steel ingots)

MOLOTKOV, V.A.; FETISOV, S.G.

Nonhomogeneity of the sheet ingots of alloyed steel. Analele metalurgie 16 no.2:36-44 Ap-Je '62.

FETISOV, S.G., kand. tekhn. nauk; PROKHOROV, A.V., inzh.; STEPANOV, F.P., inzh.

Using MK-40 steel as a substitute for MS-1 and SKhL-4 nickel-containing steel. Stal' 24 no.10:927-930 O '64. (MIRA 17:12)

L 1722-65 EWT(m)/EWP(k)/EWP(...)/EWA(c)/EWP(b)/T/EWA(d)/EWP(...)/EWP(...)
ACCESSION NR: AP5016415 Pf-4/Pad IJP(c) UR/0133/64/000/010/0927/0930
MJW/JD/HW

AUTHOR: Fetisov, S. G. (Candidate of technical sciences); Prokhorov, A. V. (Engineer); ... (Engineer)

TITLE: Steel MK-40 as a substitute for nickel steels MS-1 and SKhL-4

SOURCE: Stal', no. 10, 1964, 927-930

TOPIC TAGS: steel, nickel steel, ship component, metal property, alloy steel, sheet ... process/MK-40 steel, MS 1 steel, SKhL 4 steel

Abstract: The non-nickel steel MK-40 with a yield point of not less than ... used entirely for welded hull shipbuilding sheet steel with thicknesses from 4 to 32 mm. According to it physical, mechanical and engineering ... as well as weldability, steel MK-40 ... and from 10 to 32 mm in the approved ... the analogous steels MS-1 and SKhL-4 ...

... the shipbuilding industry. They ... and toughness properties with satisfactory resistance to

Card 1/4

L 31301-65

ACCESSION NR: AP5016415

brittle fracture; however, the presence in them of nickel (1.0-1.3 and 0.5-

silicon), which has been supplied for a long time by the

in some respects.

In accord with technical conditions the yield point in all three steels

[illegible] condition; thermal hardening for sheets 3KhL-4 and MS-1 is used beginning [illegible] d = 16 mm):

	SKhL-4				MS-4
d, mm	[illegible]-5	6-8	9-15	[illegible]	[illegible]
[illegible] mm ...	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Industrial batch of steel MK-40 was prepared at the plant for constructing a [illegible] sheets, 14-32 mm thick, from M[illegible] mo[illegible]

[illegible] step iron-ore process into molten pig iron; preliminary deoxidation [illegible] alloying the metal with manganese was done in the furnace by adding the [illegible] calculated quantity of silicon-manganese before tapping the melt. Final [illegible] and alloying with silicon was done in the ladle with 75% ferro-[illegible]silicate and aluminum (600-700 gram/ton). Additionally, ferrotitanium (based on 0.035-0.040% Ti without consideration of waste) was added to the ladle so that the content of titanium in the finished metal was about 0.01-0.0[illegible]%.

Card 3/4

L 51301-65

ACCESSION NR: AP5016415

The metal was bottom poured to produce sheet ingots weighing [illegible] tons.

Correspondingly 2 and 3 kg/ton. Orig. art. has 4 graphs.

[illegible] none

SUBMITTED: 00 ENCL: 00 SUB CODE: MM

NO REF SOV: 003 OTHER: 000 JPRS

Card 4/4

FETISOV, S.G.; PROKHOROV, A.V.; STAPANOV, F.P.; Prinimali uchastiye: GONCHAROV, A.F., inzh.; P'YANKOVA, V.F., inzh.

Effect of deoxidation on properties of low carbon structural steel alloyed with manganese. Stal' 24 no.12:1090-1092 D '64. (MIRA 18:2)

L 29381-66 EWT(m)/EWP(t)/ETI IJP(c) JD

ACC NR: AP6019796 SOURCE CODE: UR/0286/65/000/004/0113/0113

INVENTOR: Prokhorov, A. V.; Shalamov, I. I.; Fetisov, S. G.; Prokhorov, P. A.; Tutov, I. Ye.; Parshin, A. A.; Kavesh, L. D.; Slutskaya, T. M.; Yunger, S. V. 49 B

ORG: none

TITLE: Low-alloy steel. Class 18, No 148088

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 4, 1965, 113

TOPIC TAGS: low alloy steel, vanadium, boron, tensile strength, heat resistance

ABSTRACT: A low-alloy steel is proposed which has vanadium and boron added to it to increase strength and heat resistance. Its chemical composition is: 0.13-0.18% C, 1.2-1.6% Mn, 0.5-0.8% Si, 0.3-0.6% Cr, 0.15-0.25% Mo, 0.08-0.12% V and 0.003% (max) B. [JPRS]

SUB CODE: 11, 20 / SUBM DATE: none

Card 1/1 CC

BUZLYAKOV, N.I.; ZAREMBA, B.V.; LAGUTIN, N.S.; MAYYER, V.F.; FETISOV, S.M.; VASIL'YEVA, L., red.; MUKHIN, Yu., tekhn. red.

[Today and tomorrow; facts and figures about the standard of living of the Soviet people]Segodnia i zavtra; tsifry i fakty ob urovne zhizni sovetskogo naroda. Moskva, Gospolitizdat, 1962. 126 p. (MIRA 15:11)

(Cost and standard of living)

FETISOV, V.; FISHER, Z.

Creative brigades of construction workers in Moscow. NTO 5 no.10: 28-29 O '63. (MIRA 17:1)

1. Predsedatel' komiteta postroyek Moskovskogo gosudarstvennogo tresta No.1 Upravelniya otdelochnykh rabot Glavnogo upravleniya po zhilishchnomu i grazhdanskomu stroitel'stvu Moskovskogo gorodskogo ispol'nitel'nogo komiteta (for Fetisov).

FETISOV, V. (g.Novocherkassk)

Transformerless regulated power supply. Radio no.4:64 Ap '61.
(MIRA 14:7)
(Electric power supply to apparatus)

FETISOV, Vasiliy Aleksandrovich

FETISOV, Vasiliy Aleksandrovich; DROZHZHIN, Yu.N., red.; SMIRNOV, G.I., tekhn.red.

[Laboratory work in physics for students in grades 8-10] Laboratornye raboty po fizike, dlia uchashchikhsia 8-10 klassov. Moskva, Gos.uchebno-pedagog. izd-vo M-va prosv. RSFSR, 1957. 208 p. (MIRA 11:2)
(Physics--Laboratory manuals)

AUTHOR: Fetisov, V.A. (Moscow) SOV-47-58-5-12/28

TITLE: Measuring the Linear Expansion of Metals (Izmereniye lineynogo rasshireniya metallov)

PERIODICAL: Fizika v shkole, 1958, 18 Nr 5, p 60 (USSR)

ABSTRACT: The author describes a simple device for defining the coefficient of the linear expansion of metals. It consists of 2 metal supports with holes for a brass tube, an indicator and a wedge. The tube is filled with snow, placed into the hole of the support so that the gap between the support and the plate-indicator does not exceed 2-3 mm. The tube is then connected to a rubber steam pipe with a flask filled with water which is heated on a gas burner or electric plate. When steam escapes through the other end of the tube the new position of the plate-indicator is marked on the wedge, and the length of the legs (Figure 2) is measured. There are 3 diagrams.

1. Metals--Mechanical properties 2. Metals--Temperature factors

Card 1/1

FETISOV, Vasiliy Aleksandrovich; Alekseyeva, N.V., red.; KOVALENKO, V.L., tekhn.red.

[Laboratory works on physics; for students of grades 8 to 10] Laboratornye raboty po fizike; dlia uchashchikhsia 8-10 klassov. Izd.3., perer. Moskva, Gos.uchebno-pedagog.izd-vo M-va prosv. RSFSR, 1961. 238 p. (MIRA 15:2)
(Physics--Study and teaching)

ZHAMANKULOV, Zh.K.; FETISOV, V.A.; SADYKOV, G.Kh.

Method of breaking up oversize pieces of ore under restricted conditions. Trudy Inst. gor. dela AN Kazakh.SSR 12:155-158 '63. (MIRA 17:8)

1. Sokolovsko-Sarbayskiy gornoobogatitel'nyy kombinat (for Zhamankulov, Fetisov). 2. Institut gornogo dela AN Kazakhskoy SSR (for Sadykov).

FETISOV, V.F.

USSR/Physics - Instruments

Card 1/1 Pub. 43 - 31/97

Authors : Fetisov, V. F.

Title : Modernization of the IG-2 spark generator

Periodical : Izv. AN SSSR. Ser. fiz. 18/2, 263-264, Mar-Apr 1954

Abstract : Brief report is presented on the changes made in the IG-2 spark generator for the purpose of eliminating the basic source of its instability. The results obtained with the modified spark generator were found highly satisfactory.

Institution : .....

Submitted : .....

FETISOV, VLADIMIR FEDOROVICH

PHASE I BOOK EXPLOITATION 959

Krichevskiy, Yevgeniy Samoylovich, Fedorovich, Leonid Grigor'yevich, and Fetisov, Vladimir Fedorovich

Elektrooborudovaniye optiko-mekhanicheskikh priborov (Electrical Equipment of Optical-Mechanical Instruments) Moscow, Oborongiz, 1958. 467 p. 8,000 copies printed.

Reviewers: Vertsner, V.N., Candidate of Physical and Mathematical Sciences, Kruger, M.Ya., Engineer, Shoshin, I.A., and Sobolev, S.F.; Ed.: Dulin, V.N., Candidate of Technical Sciences; Ed. of Publishing House: Bogomolova, M.F.; Tech. Ed.: Pukhlikova, N.A.; Managing Ed.: Sokolov, A.I., Engineer.

PURPOSE: This monograph has been approved as a textbook for tekhnikums by the Administration of Secondary Professional Schools of the Ministry of Higher Education, USSR. The book is addressed to students taking courses in the design and construction of optical-mechanical instruments and equipment. It may also be of use to engineering and technical personnel in the industry.

COVERAGE: This book describes basic electrical devices and systems, their design and their special form as applied to optical-mechanical instruments and equipment. The book contains selected reference material necessary to the student

Card 1/11

for design projects. According to the authors, the present work is the first attempt to systematize the varied material on the subject of electric circuits and systems of optical-mechanical equipment. Part I of Chapter 3, and Parts I and III of Chapters 4, 5, 8 and 9 were written by Ye.S. Krichevskiy. Part II of Chapters 1, 2, and 3, and Part II and IV of Chapters 7 and 9 were written by V.F. Fetisov. Chapter 6 was written by L.G. Fedorovich. The authors thank Candidate of Physical and Mathematical Sciences, V.N. Vertsner and Engineers M.Ya. Kruger, S.F. Sobolev, and I.A. Shoshin for their help in editing the book. There are 132 references, all Soviet (including 3 translations).

TABLE OF CONTENTS:

Electrical Equipment of Optical-Mechanical (Cont.)

AVAILABLE: Library of Congress

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JP/fal
1-7-59

FETISOV, V.G., kand.tekhn.nauk

Water-bearing capacity of capping rocks of the Raychikhinsk brown coal deposit. Amur sbor. no.2:269-276 '60. (MIRA 15:3)

1. Deystvitel'nyy chlen Geograficheskogo obshchestva SSSR.
(Raychikhinsk region--Water, Underground)

FETISOV, V.G.

Calculating the stability of stripping benches during open pit working of coal deposits. Sbor. nauch. rab. DVNIIS no.1:251-256 '61. (MIRA 16:11)

FETISOV, V.I., aspirant

Therapy and chemical prophylaxis of Passalurus infestation in rabbits. Veterinariia 39 no.10:55-56 O '62. (MIRA 16:6)

1. Vsesoyuznyy institut gel'mintologii imeni akademika K.I. Skryabina.

(Parasites—Rabbits) (Nematoda)
(Anthelmintics)

FETISOV, V.I., kand. veterin. nauk

Hexachloroparaxylene as an efficient anthelmintic in dicrocoeliosis of sheep. Veterinariia 41 no.2:61-62 F '64.
(MIRA 17:12)

1. Vsesoyuznyy institut gel'mintologii imeni akademika K.I. Skryabina.

FETISOV, V.I., kand. veter. nauk

Testing hexachloro-para-xylene, hetol, and hetoline in dicrocoeliasis. Veterinariia 41 no.11:47-48 N '64.
(MIRA 18:11)

1. Vsesoyuznyy institut gel'mintologii imeni akademika Skryabina.

FETISOV, V.I., aspirant

Therapy and chemoprophylaxis of Passalurus infestation of rabbits. Trudy VIGIS 11:161-172 '64. (MIRA 18:12)

6 (2) SOV/111-59-10-18/23

AUTHOR: Fetisov, V.M., Chief

TITLE: To Increase the Quality and Lower the Cost of Projecting Communications Construction Works

PERIODICAL: Vestnik svyazi, 1959, Nr 10, pp 29-30 (USSR)

ABSTRACT: This article deals with the work of design organizations in the USSR in connection with the construction of communications facilities. The author first reviews at some length a number of projects already completed or currently under way; reference is made to cable trunk project work by the "Giprosvyaz'" Institute, as well as other projects connected with inter-city telephone stations (MTS), postal handling and its mechanization, systems of economical remote powering of un-manned repeating stations (NUP); he states that a series of automatized diesel generators for repeating stations has been developed in cooperation with industry; also mentioned are long-range radio relay trunks for handling TV programs and telephone communications projected by GSPI, as well as radio relay line projects utilizing tropospheric disper-

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To Increase the Quality and Lower the Cost of Projecting Communications Construction Works

sion, radio broadcasting centre projects, particularly a project for a powerful 3-program TV station for the Moscow telecentre, for which the "Mosproyekt" Institute has developed a free-standing re-inforced concrete tower 508 meters tall. The "Giprosvyaz'" and GSPI institutes, states the author, are developing new and modernizing existing standard designs, as a result of which 60.2% of construction-installation work in the communications industry in 1958 was done on standard designs, as against 45.8% in 1957. Several standard designs from these two institutes are enumerated, as well as their work on standard documentation. The author also treats "substantial deficiencies" in the work of the project organizations, the conduct of project work, non-standard equipment and the need for standardization, and cost cutting in project work; the changeover to cost accounting, he states, will increase the responsibility of the institutes and their clients for cutting project costs. Also noted is the need for full coordination between project institu-

To Increase the Quality and Lower the Cost of Projecting Communications Construction Works

tes, scientific-research institutes (NII) and design bureaus in their work. Industrialization and mechanization of construction work, especially in connection with construction of new cable and radio-relay lines, is also discussed. The author states that the volume of project and prospecting work accomplished by the "Giprosvyaz'" and GSPI institutes for 1958 exceeded the volume for 1957 by 30%; almost 50% more such work is planned for 1959 than was done in 1958.

ASSOCIATION: Tekhnicheskiy otdel i ekspertiza GUKS ministerstva svyazi SSSR (Technical Department and Commission of Experts of the GUKS of the Ministry of Communications of the USSR)

GRINBERG, Ya.M.; KRAYNOVA, M.V.; FETISOV, V.N.

Treatment of diabetes mellitus with chemotherapeutic preparations. Klin.med. 38 no.7:56-60 '60. (MIRA 13:12)
(DIABETES)

S/903/62/000/000/030/044
B102/B234

AUTHORS: Balashov, V. V., Fetisov, V. N.

TITLE: The role of nucleon associations in deep photodisintegration of light nuclei

SOURCE: Yadernyye reaktsii pri malykh i srednikh energiyakh; trudy Vtoroy Vsesoyuznoy konferentsii, iyul' 1960 g. Ed. by A. S. Davydov and others. Moscow, Izd-vo AN SSSR, 1962, 441-449

TEXT: Deep photodisintegration (i.e. γ,t or γ,α reactions) of light nuclei is investigated with the help of a method described in ZhETF, 37, 1385, 1959 on the basis of Maykov's experiments (Dissertation FIAN 1959) who studied the reaction $C^{12} + \gamma \rightarrow p + He^3 + He^4 + He^4 - 27.1$ Mev; this reaction has two maxima at $E_\gamma \simeq 43$ Mev and $E_\gamma \approx 60 - 65$ Mev. Maykov has assumed that this reaction takes place in two stages: $C^{12} + \gamma \rightarrow p + B^{11*}$, $B^{11*} \rightarrow Be^8 + H^3$. This possibility is now subjected to a detailed theoretical analysis in which the calculations are carried out for different values of the B^{11} excitation

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energy. It can be shown that the probability of a decay of B^{11} into Be^8+H^3 is greater by a factor of 20 than for a decay into $Li^7+\alpha$. A determination of the probability ratio of $B^{11} \rightarrow Be^8 + H^3$ decays onto different levels $(0^+/2^+)$ of the Be^8 nucleus gives good agreement with the experimentally found level $E^*_{B^{11}} = 19$ Mev. The second maximum however may not be explained, also not by assuming successive emission of p and t. An analysis of the $C^{12}(\gamma,pt)2\alpha$ reaction shows that complex particles as α or t are emitted when excited nuclei decay. Such decays may be observed both in the region of giant resonance and at higher energies. In all cases the decay probabilities may be calculated with the shell model. At $E_\gamma = 60 - 70$ Mev a certain mechanism of "quasi-α-particle" absorption of γ-quanta is possible which leads to simultaneous emission of p and t and to "quasi-deuteron" absorption mechanism at higher γ-quantum energies. Finally the great importance of photonuclear reactions for investigating the inner nuclear shells is pointed out. In an appendix the formulas used for determining the decay widths

The role of nucleon...

are derived bot for $Be^{11*} \rightarrow Be^{8} + H^{3}$ and $B^{11*} \rightarrow Li^{7} + He^{4}$. There are 5 figures and 2 tables.

ASSOCIATION: Nauchno-issledovatel'skiy institut yadernoy fiziki, MGU im. M. V. Lomonosova (Scientific Research Institute of Nuclear Physics, MGU imeni M. V. Lomonosov)

BALASHOV, V.V.; FETISOV, V.N.

Supermultiple level structure and characteristics of the (γ,d) reaction on light nuclei. Izv. AN SSSR. Ser. fiz. 26 no.9:1188-1189 S '62. (MIRA 15:9)

1. Nauchno-issledovatel'skiy institut yadernoy fiziki Moskovskogo gosudarstvennogo univeristeta im. M. Lomonosova.
(Quantum theory) (Nuclear reactions)

44286
S/048/62/026/012/016/016
B117/B102

24,6600

AUTHOR: Fetisov, V. N.

TITLE: Quasi-α-particle mechanism of carbon photofission

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya, v. 26, no. 12, 1962, 1525 - 1526

TEXT: The shell model was used to estimate the contribution of the quasi-α-particle mechanism to the reaction $C^{12}(\gamma,p)$ in the range $\sim 30 \leq E_\gamma \leq 60$ Mev. It was shown that the probability of the reaction $C^{12}(\gamma,p)$, in which only the proton is emitted and the triton is captured by the residual nucleus Be^8, can be roughly estimated only if the following factors are considered: Different thresholds of the γ-energy necessary for emitting p and H^3 in the continuous spectrum, Coulomb and centrifugal barriers. The contribution of the quasi-α-particle mechanism to the total cross section of $C^{12}(\gamma,p)$ is equal to the sum of partial cross sections for every single quasi-α-particle multiplied by the probabilities of proton emission and triton capture by Be^8. The barrier penetrability was estimated in the

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Quasi-α-particle mechanism ...

usual way for p and H^3 without considering the interaction proton - residual nucleus. For the cross section of $He^4(\gamma,p)H^3$ experimental values were used. A comparison between theoretical and experimental data showed that in the range of energy here studied it is the interaction between γ-quanta and the quasi-α-particle that makes the main contribution to the reaction $C^{12}(\gamma,p)$. With higher γ-energies the quasi-α-particle mechanism is replaced by a two-nucleon mechanism. This paper was presented at the 12th Annual Conference on Nuclear Spectroscopy in Leningrad from January 26 to February 2, 1962. There is 1 figure.

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva Akademii nauk SSSR (Physics Institute imeni P. N. Lebedev of the Academy of Sciences USSR)

Card 2/2

BALASHOV, V.V.; FETISOV, V.N.

Theory of photodisintegration of light nuclei with emission of fast deuterons. Zhur. eksp. i teor. fiz. 45 no.3:532-540 S '63. (MIRA 16:10)

1. Institut yadernoy fiziki Moskovskogo gosudarstvennogo universiteta.
(Nuclear reactions) (Deuterons)

ACCESSION NR: AP4031163 S/0056/64/046/004/1395/1398

AUTHOR: Fetisov, V. N.

TITLE: An analysis of photodisintegration of H-3 with account of the rigid core of the nucleon

SOURCE: Zh. eksper. i teor. fiz., v. 46, no. 4, 1964, 1395-1398

TOPIC TAGS: tritium, helium 3, photodisintegration, integral cross section, gamma deuteron reaction

ABSTRACT: The values of the mean square radius, the binding energy, the Coulomb energy, and the theoretical integral cross section σ_{-1}^{theor} are tabulated. Inasmuch as the values for the integral cross sections calculated by Varfolomeyev and Grobunov (Phys. Lett. v. 5, 149, 1963) with the aid of the wave functions derived by Kikuta, Morita, and Yamade (Progr. Theor. Phys. v. 15, 222, 1956) do not give ample information on the character of the photodisintegration of $H^3(He^3)$, the authors have plotted the cross section curves for the reaction H^3 (γ, d)n, obtained with the aid of these wave functions, for three sets of parameters:

a) $d = 0{,}4\cdot10^{-13}$ см $\quad \mu = 0{,}4\cdot10^{13}$ см$^{-1}$ $\quad \nu = 4{,}5\cdot10^{13}$ см$^{-1}$

b) $d = 0{,}4\cdot10^{-13}$ см $\quad \mu = 0{,}5\cdot10^{13}$ см$^{-1}$ $\quad \nu = 4{,}5\cdot10^{13}$ см$^{-1}$

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ACCESSION NR: AP4031163

c) $d = 0{,}6 \cdot 10^{-13}$ см $\mu = 0{,}5 \cdot 10^{13}$ см$^{-1}$ $\nu = 4{,}5 \cdot 10^{13}$ см$^{-1}$

The cross sections so calculated are close to those obtained by Gunn and Irving (Phil. Mag. v. 42, 1353, 1951) if the functions for the ground state of H^3 yield similar mean square radii. The value of the cross section in the vicinity of the maximum is not less than 2/3 of the experimental value, and since all cross section calculations have so far been carried out only in the Born approximation, the discrepancy between theory and experiment must be due to the inadequacy in the wave function of the H^3 ground state. The dependence of the integral cross section on the radius of the hard core of the nucleon is also given. It is pointed out that a more exact treatment of the wave functions of the nucleon and the deuteron in the final state must be employed. "The author is deeply grateful to A. M. Baldin for numerous discussions during the course of this work, and to A. T. Varfolomeyev and A. N. Grobunov for a discussion of the results, and to V. P. Fomina for doing the computations on the FIAN electronic computer. Orig. art. has: 1 figure, 4 formulas, and 1 table.

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva Akademii nauk SSSR (Physics Institute, Academy of Science SSSR)

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ACCESSION NR: AP4031163

SUBMITTED: 11Oct63 DATE ACQ: 07May64 ENCL: 00

SUB CODE: NP NR REF SOV: 000 OTHER: 010

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