DREYZIN, R.S., YANKEVICH, O.D., ZOLOTARSKAYA, E.E.

"Adenvirus infection."

Report submitted to the Intl. Congress for Microbiology
Montreal , Canada 19-25 Aug 1962

DREIZIN, R. S.; ZOLOTARSKAYA, E. E.; KETILADZE, E. S.; PASHKEVICH, G. B.; KNYAZEVA, L. D.; TRIVUZ, N. L.; PAKTORIS, E. A.; ANZHELLOV, V. O.

Adenoviruses and infections caused by them in the U.S.S.R. J. hyg. epidem. 6 no.2:165-168 '62.

1. Ivanovsky Institute of Virology, Academy of Medical Sciences of U.S.S.R., Moscow.

(ADENOVIRUS INFECTIONS)

DREYZIN, R.S.; ZOLOTARSKAYA, E.Ye.; DAVYDOVA, A.A.

Immunological structure of the population of Moscow in relation to adenoviruses. Vop. virus 7 no.1:85-91 Ja-F '62. (MIRA 15:3)

1. Institut virusologii imeni D.I. Ivanovskogo AMN SSSR, Moskva.
(MOSCOW--ADENOVIRUS INFECTIONS)

DREYZIN, R.S.; ZOLOTARSKAYA, E.Ye.; YANKEVICH, O.D.; MELLER, L.; MEVZOS, L.M.

Various possibilities of using the hemagglutination and hemagglutination inhibition reactions with adenoviruses. Vop. virus. 10 no.1:111-117 Ja-F '65. (MIRA 18:5)

1. Institut virusologii imeni Ivanovskogo AMN SSSR, Moskva.

IVANOV, I. and ZOLOTARSKII, A.

Vazhneishie voprosy poslevoennogo razvitiia putevogo khoziaistva. [Important questions of postwar development of rail tracks]. (Zhel-dor. transport, 1945, no. 7, p. 51-57, tables). DLC: HE7.Z5

SO: SOVIET TRANSPORTATION AND COMMUNICATIONS, A BIBLIOGRAPHY, Library of Congress Reference Department, Washington, 1952, Unclassified. (Card 2 of 2)

Apr 1947

USSR/Engineering
Tracks, Railroad
Railroads - Track Protection

"Determining the Operational Output and the Yearly Normal Replacement of Rails," A. F. Zolotarskiy, Candidate in Technical Sciences, 3 pp

"Vestn Zheleznykh Dorog" No 4

In prewar days the yearly output of rails reached 500,000 tons. The Five-Year Plan of 1946 - 1950 calls for 4.5 million tons of rails. Up to the present time the number of rails which have to be replaced yearly has not been worked out since the variety of climatic conditions makes it impossible to establish a single method of determining the wear and replace-

28T41

Apr 1947

BS

USSR/Engineering (Contd)

ment of rails. Presents some mathematical formulas to assist in estimating the wear on rails.

28T41

ZOLOTARSKIY, A. F.

BS

ZOLOTARSKIY, A. F.

ZOLOTARSKIY, A.F., kandidat tekhnicheskikh nauk

Determining the periodic repair of railroads. Tekh.zhel.dor.7 no.10:5-8 O '48. (MLRA 8:11)
(Railroads--Maintenance and repair)

ZOLOTARSKIY, A. F.

Zolotarskiy, A. F. and Popov, S.N. - "The immediate tasks of regular roadbed maintenance", Tekhnika zhel. dorog, 1948, No. 12, p. 1-3.

So: U-3042, 11 March 53, (Letopis 'Zhurnal 'nykh Statey, No. 7, 1949).

ZOLOTARSKIY, A.F., kandidat tekhnicheskikh nauk.

Prospective method of strengthening the ballast section with its rails and ties. Zhel.dor.transp.37 no.11:63-67 N '55. (Railroads--Maintenance and repair) (MLRA 9:2)

ZOLOTARSKIY, A.F., kandidat tekhnicheskikh nauk.

Selecting types of railroad ties. Put' i put. khoz. no.3:15-16 Mr '57. (MLRA 10:5)

(Railroads—Ties)

ZOLOTARSKIY, A.F., kand.tekhn.nauk.

Railroad track development during the 40 years of Soviet power.
Vest.TSNII MPS 16 no.6:15-20 S '57. (MIRA 10:10)
(Railroads--Track)

Zolotarskiy, A. F.

ZOLOTARSKIY, A.F., kand.tekhn.nauk.

Urgent problems in reinforcing track superstructure. Zhel.dor. transp. 40 no.1:39-45 Ja '58. (MIRA 11:1)
(Railroads--Track)

VEDENKIN, S.G., prof.; ZOLOTARSKIY, A.F., kand.tekhn.nauk

Basic methods for the control of metal corrosion in railroad equipment. Vest. TSNII MPS 17 [i.e. 19] no.7:3-7 '60. (MIRA 13:11)

(Railroads--Equipment and supplies)
(Corrosion and anticorrosives)

ZOLOTARSKIY, A.F.; VLASOV, V.I.

Nonferrous metals and alloys for railroad equipment. Trudy TSNII MPS no.277:3-4 '64. (MIRA 17:6)

1. Zamestitel' direktora Vsesoyuznogo nauchno-issledovatel'skogo instituta zheleznodorozhnogo transporta. (for Zolotarskiy).
2. Rukovoditel' otdeleniya ispytaniya materialov i konstruktsii Vsesoyuznogo nauchno-issledovatel'skogo instituta zheleznodorozhnogo transporta. (for Vlasov).

ZOLOTARSKIY, Aleksey Fedorovich; VERSHINSKIY, Sergey Vasil'yevich; YERSHKOV, Oleg Petrovich; IVASHCHENKO, Georgiy Ivanovich; SHESTYAKOV, Vladimir Nikolayevich; CHERNYSHEV, Mikhail Andreyevich, prof.; PERSHIN, S.P., red.

[Railroad tracks and rolling stock for high speed traffic conditions] Zheleznodorozhnyi put' i podvizhnoi sostav dlia vysokikh skorostei dvizheniia. Moskva, Transport, 1964. 271 p. (MIRA 18:10)

L 44383-66 EWT(d)/EWT(m)/EWP(w)/EWP(c)/EWP(w)/T/EWP(t)/ETI/EWP(k)/EWP(h)/EWP(l)
ACC NR: AP6030076 IJP(c) JD/DJ SOURCE CODE: UR/0232/66/000/008/0055/0059

AUTHOR: Zolotarskiy, A. F. (Doctor of technical sciences)

ORG: none.

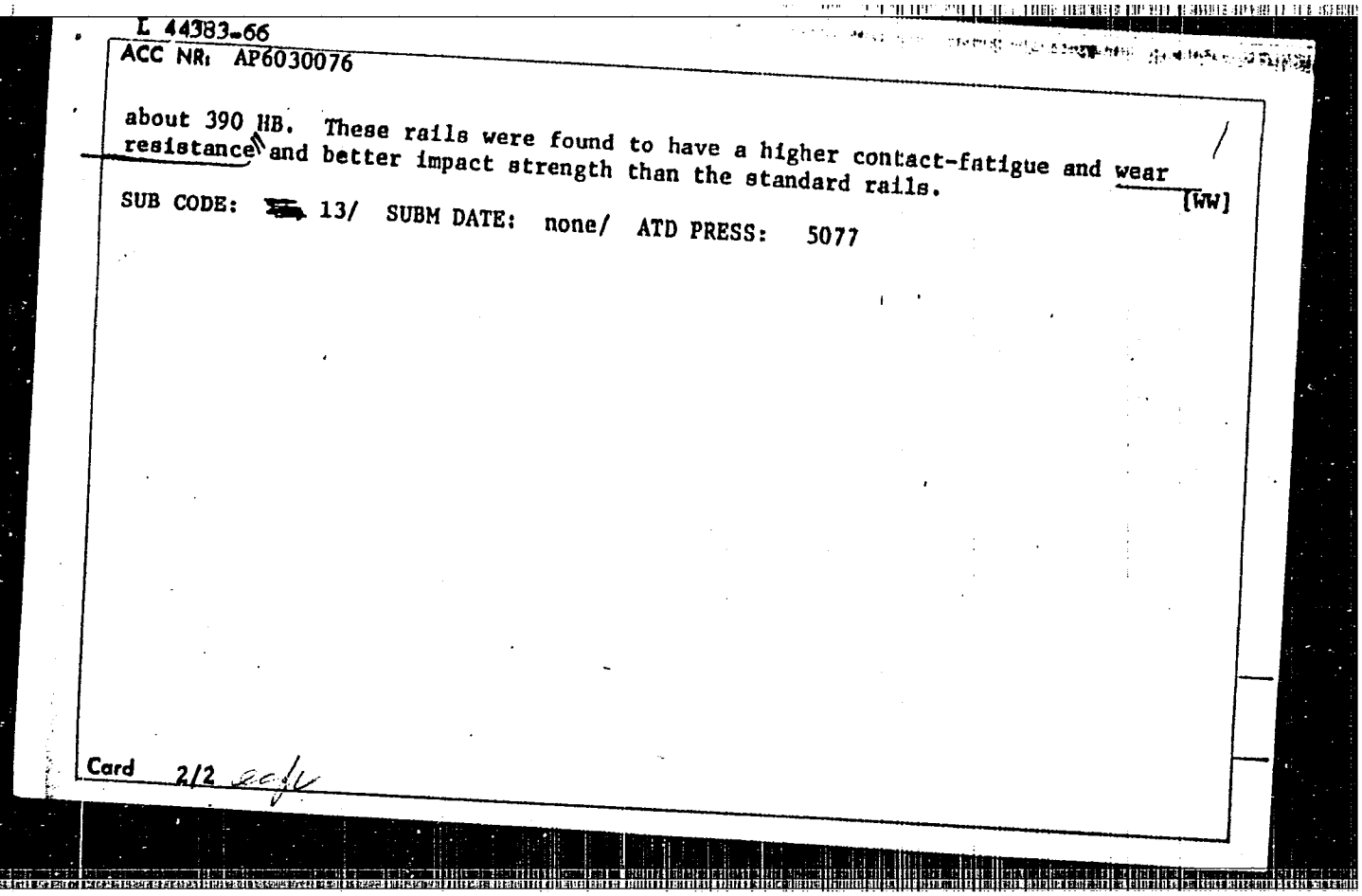
TITLE: Increasing rail service life

SOURCE: Zheleznodorozhnyy transport, no. 8, 1966, 55-59

TOPIC TAGS: railway transportation, railway engineering, railway, rail structure, rail service life

ABSTRACT: Rail traffic in the Soviet Union is reportedly several times heavier than that in Western Europe or the United States. Further increases expected in the next five years have presented a serious problem to rail making plants, since it will require an increase in rail service life to 1 billion tons on straight track and 500—600 million tons on curves. Increasing the weight and improving the quality of rails increased fatigue and wear resistance but did not eliminate contact fatigue, which was found to be the major cause of rail failure, accounting for 50—60% of all failures in 1964. Extensive research conducted with the participation of scientific research institutes of the railroad transportation and metallurgical industries has not yet solved the problem. It was found, however, that heat treatment (oil quenching immediately after rolling) produces rails with a sorbitic structure with a hardness of

Card 1/2 UDC: 625.143.004.15



L 44383-66
ACC NR: AP6030076

about 390 HB. These rails were found to have a higher contact-fatigue and wear resistance and better impact strength than the standard rails. [WW]

SUB CODE: 13/ SUBM DATE: none/ ATD PRESS: 5077

Card 2/2

SHCHAPOV, N.P., doktor tekhn.nauk, prof.; ZOLOTARSKIY, A.F., kand.tekhn.nauk; TSUKANOV, P.P., kand.tekhn.nauk

Serviceability of the rail steel and ways to improve it. Vest. TSNII MPS 22 no.6:3-7 '63. (MIRA 16:10)

ZOLOTARSKIY, A.F., kand.tekhn.nauk; CHERNYSHEV, M.A., kand.tekhn.nauk

Improving the interaction of track and rolling stock.
Zhel.dor.transp. 42 no.7:49-54 Jl '60. (MIRA 13:7)

(Railroads--Rolling stock)
(Railroads--Track)

ZOLOTARSKIY, A.F., kand.tekhn.nauk; PLATOV, V.I., inzh.

Prospects for over-all mechanization of major track repairs.
Zhel.dor.transp. 41 no.3:39-42 Mr '59. (MIRA 12:6)
(Railroads--Track)

ZOLOTARSKIY, A.F., kand.tekhn.nauk; NIKIFOROVSKIY, V.D., inzh.

Lengthening the life of wooden ties. Zhel.dor.transp. 42 no.1:46-51 Ja '60. (MIRA 13:5)
(Railroads--Ties)

ZOLOTARSKIY, A.F., kand. tekhn. nauk

Prospects for the development of railroad track maintenance.
Vest. TSNII MPS 17 no.8:8-12 D '58.
(Railroads--Trabks) (MIRA 12:1)

ZOLOTARSKIY, Aleksey Fedorovich, kand.tekhn.nauk; SEREBRENNIKOV, Vladimir Vasil'yevich, kand.tekhn.nauk; BERG, Oleg Yanovich, kand.tekhn. nauk; SHESTOPEROV, Sergey Vladimirovich, prof., doktor tekhn.nauk; VERIGO, Mikhail Feliksovich, prof., doktor tekhn.nauk; SOROKIN, N.N., red.; VERINA, G.P., tekhn.red.

[Reinforced concrete ties] Zhelezobetonnye shpaly. Pod red. M.F.Verigo. Moskva, Gos.transp.zhel-dor.izd-vo, 1959. 327 p. (Railroads--Ties, Concrete) (MIRA 12:3)

ZOLOTARSKIY A.F.

29

PHASE I BOOK EXPLOITATION SOV/5075

International Institute of Welding

XII kongress Mezhdunarodnogo instituta svarki, 29 iyunya - 5 iyulya 1959 v g. Opatii (Twelfth Annual Assembly of the International Institute of Welding, Opatija, June 29 - July 5, 1959) Moscow, Mashgiz, 1961. 359 p. 3000 copies printed.

Sponsoring Agency: Natsional'nyy komitet SSSR po svarke.

Ed. (Title page): G. A. Maslov, Docent; Translated from English, French, and Serbo-Croatian by N. S. Aborenkova, K. N. Belyayev, E. P. Bogacheva, L. A. Borisova, K. V. Zvegintseva, V. S. Minaviehev, and M. M. Shelechnik; Managing Ed. for Literature on the Hot-Working of Metals: S. Ya. Golovin, Engineer.

PURPOSE: This collection of articles is intended for welding specialists and the technical personnel of various production and repair shops.

Card 1/

Twelfth Annual Assembly (Cont.) SOV/5975

COVERAGE: The collection contains abridged reports presented and discussed at the Twelfth Annual Assembly of the International Institute of Welding. Reports deal with problems of welding and related processes used in repair work, repair techniques, and the problems arising in connection with the nature of the base and filler materials. Examples of repairing various parts are given, and the organization of repair operations in workshops and under field conditions is discussed. Economic aspects of welding and related processes as used in repair work are analyzed. No personalities are mentioned. There are no references.

TABLE OF CONTENTS: [Only Soviet and Soviet-bloc reports are given here]

ZOLOTARSKIY, A.F., kand.tekhn.nauk

Research in the field of railroad tracks. Put' i put.khoz. 5 no.9:24-27 S '61. (MIRA 14:10)
(Railroads--Track) (Railroad research)

TSUKANOV, P.P., kand.tekhn.nauk; ZOLOTARSKIY, A.F., kand.tekhn.nauk

Norms of repair periodicity are a most important feature in track management. Zhel.dor.transp. 43 no.6:27-33 Je '61. (MIRA 14:7)

(Railroads--Maintenance and repair)

SHAKHUNYANTS, Georgiy Mikhaylovich, doktor tekhn. nauk; AMELIN, S.V., prof., retsenzent; KONSTANTINOV, V.N., dots., retsenzent; SMIRNOV, M.P., retsenzent; YAKOVLEV, V.F., retsenzent; BOCHENKOV, M.S., kand.tekhn. nauk, retsenzent; BROMBERG, Ye.M., retsenzent; YERSHKOV, O.P., retsenzent; ZVEREV, B.N., retsenzent; ZOLOTARSKIY, A.F., retsenzent; IVASHCHENKO, G.I., retsenzent; LINEV, S.A., retsenzent; MARKAR'YAN, M.A., retsenzent; POPOV, V.V., retsenzent; POPOV, S.N., retsenzent; SEREBRENNIKOV, V.V. retsenzent; SHAFRANOVSKIY, A.K., retsenzent; NOVITSKIY, G.I., inzh., retsenzent; VIKTOROV, I.I., kand.tekhn.nauk, retsenzent; VYSOTSKIY, A.F., kand.tekhn.nauk, retsenzent; SAATCHYAN, G.G., kand.tekhn.nauk, retsenzent; YAKOVLEVA, Ye.A., kand.tekhn.nauk, retsenzent; TITOV, V.P., kand.tekhn.nauk, retsenzent; GRUSHEVOY, N.G., inzh., red.; BROMBERG, Ye.M., kand.tekhn.nauk, red.; KHITROV, P.A., tekhn. red.

[Railroad tracks] Zheleznodorozhnyi put'. Moskva, Vses.izdatel'sko-poligr.ob"edinenie M-va putei soobshcheniia, 1961. 615 p. (MIRA 14:12)

1. Kafedra "Zheleznodorozhnyy put'" Leningradskogo instituta inzhenerov zheleznodorozhnogo transporta (for Amelin, Konstantinov, Smirnov, Yakovlev). 2. Vsesoyuznyy nauchno-issledovatel'skiy institut zheleznodorozhnogo transporta (for Bochenkov, Bromberg, Yershkov, Zverev, Zolotarskiy, Ivashchenko, Linev, Markar'yan, Popov, V.V., Popov, S.N., Serebrennikov, Shafranovskiy, Novitskiy). 3. Vsesoyuznyy nauchno-issledovatel'skiy institut transportnogo stroitel'stva (for Viktorov, Vysotskiy, Saatchyan, Yakovleva, Titov)

(Railroads--Track) (Railroad engineering)

MATOSYANTS, A.I.; ZOLOTARSKIY, A.Z.

Case of Takayasu's syndrome. Sbor. trud. Kursk. gos. med. inst. no.16:368-370 '62. (MIRA 17:9)

1. Iz gospital'noy terapevticheskoy kliniki (zav. - prof. A.I. Matosyants) Kurskogo meditsinskogo instituta.

ACC NR: AP6035711 (N) SOURCE CODE: UR/0413/66/000/019/0058/0058

INVENTOR: Zolotarevskiy, D. B.; Shvartser, A. Ya.

ORG: none

TITLE: Interlayer for joining low-carbon steel to high-manganese steel. Class 21, No. 186584

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 19, 1966, 58

TOPIC TAGS: metal joining, metal welding, high manganese steel welding, ~~dissimilar~~ steel welding, metal bonding, manganese steel, low carbon steel

ABSTRACT: This Author Certificate introduces an interlayer, containing carbon, manganese, silicon and phosphorus, for facilitating the joining of low-carbon steel to high-manganese steel. To increase the joint strength of the bond and to prevent a cleavage in deposited metal, the composition of the interlayer is set as follows: 0.75—0.85% molybdenum, 0.45—0.6% tungsten , 0.5% max manganese, 0.08% max carbon, 0.1% max silicon and 0.03% max phosphorus.

SUB CODE: 13/11/ SUBM DATE: 09Jul65/

Card 1/1 UDC: 621.791.042

ZOLOTAREVSKIY, I.

Losses on containers can be decreased. Sov.torg. 35 no.7:10-13 Jl '62. (MIRA 15:11)

(Packing for shipment)

ZOLOTAREVSKIY, I.Ya.; SAPRYKIN, A.V.; GUBANOV, V.S.; GARNETSKOV, V.Z.; ILYUSHIN, A.P., red.; EL'KINA, E.M., tekhn. red.

[The container] Tara. Izd.2., perer. Moskva, Gostorgizdat, 1963. 229 p. (MIRA 17:1)

(Containers)

S/113/60/000/002/005/009
D207/D306

AUTHORS: Zolotarevskiy, V. S., Candidate of Technical Sciences, Chernyak, B. Ya., Sharapov, K. A., Zolotarevskiy, L. S. and Dmitriyev, A. A.

TITLE: A new piezoelectric crystal pickup

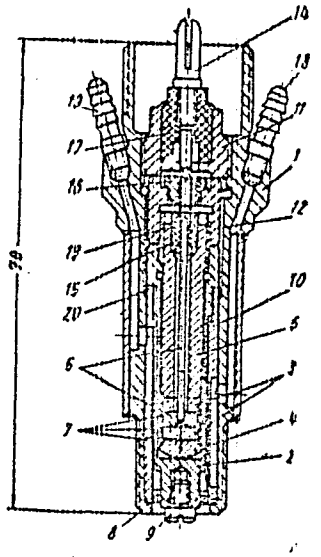
PERIODICAL: Avtomobil'naya promyshlennost', no. 2, 1960, 32-33

TEXT: The Laboratoriya dvigateley AN SSSR (Engines Laboratory, AS USSR) has developed the ЛДК-03 (LDK-03) piezoelectric crystal pickup for use with a cathode-ray oscillograph in studying the working process of piston engines.(illustrated below). The case 1 contains a thin-walled brass socket 2, inside which are contained the crystal plates 3, the lower spherical support 4, the upper support 5 and the charge tapping system 6. The crystal plates are centered by rings 7. At the bottom of the pickup is fixed a corrugated steel membrane 8 fastened to the socket 2 by a screw 9. The membrane is packed down by an intermediate pressure bush 10 and a female screw 11. The latter also serves as a tapping contact and

A new piezoelectric crystal pickup

S/113/60/000/002/005/009
D207/D306

secures the pickup parts in the case. The nut 12 fixes the upper support 5 in the socket 2 and transmits the pressure of the screw 11 via the thick part of the socket to the pressure bush 10. The electric charge developed by the crystals is led off via the tapping system 6, the spring 13 and the contact rod 14. Insulation is effected by three amber collars 15, 16 and 17. The pickup is cooled by running water which enters by the inlet tube 18 and proceeds via channels in the case and pressure bush directly to the membrane and hence to the outlet tube 19. A rubber ring 20 prevents the water from penetrating to the electrical tapping system. The pickup is not affected by cyclic temperature changes in the engine cylinder since the corrugated form of the steel membrane compensates linear changes due to temper-



Card 2/4

ature. The pickup can pass oscillations up to a limit of 8,000 - 10,000 cycles. No characteristic distortion of the indicator diagram due to the pickup's relatively high frequency of natural oscillations in a transverse direction (25,000 - 30,000 cycles) could be observed even at engine revolutions of 4,500 rpm. To ensure linear indicating characteristics the crystal elements are compressed beforehand with the help of the brass socket. The pickup's high degree of sensitivity depends on: 1) the high coefficient of the membrane which reaches 0.7; 2) the low degree of membrane rigidity due to its thinness (0.15-0.20 mm) and corrugation; 3) the low relation between the longitudinal rigidity of the socket walls and that of the central power line (supports and crystal elements) due to the thinness of the socket walls (0.2 mm). The pickup's dimensions are: length 70 mm maximum, diameter of the threaded insert end 14 mm, case diameter 18 mm. The pickup has proved highly reliable, stable and accurate. Used in conjunction with the Engines Laboratory's indicator calibration method it ensures accurate indication with an error of no more than 2-3%. The pickup is presently used in all engine indication work at the Laboratory and can be

A new piezoelectric crystal pickup

S/113/60/000/002/005/009
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recommended for commercial series production. There is 1 figure and 1 Soviet-bloc reference.

ASSOCIATION: Laboratoriya dvigateley, AN SSSR (Engines Laboratory, AS USSR)

Card 4/4

YEVGRAFOV, K.G.; ZOLOTAREVSKIY, L.S.

Using pulsating combustion in gas-turbine units. Trudy Lab.dvig. no.5:13-22 '60. (MIRA 14:3)

(Gas turbines)

KIRPATOVSKIY, I.D.; VANTSYAN, Ye.N.; ZOLOTAREVSKIY, V.B.

Alloplasty of the muscular coat of the esophagus with a polyvinyl-alcohol sponge. Khirurgiia 35 no.8:48-54 Ag '59. (MIRA 13:12)
(ESOPHAGUS--SURGERY)

ZOLOTAREVSKIY, V.B.; LEVENSON, V.I.

Histochemical study of the protein metabolism of thyroid tissue in various functional states. Probl. endkok. i gorm. 6 no. 1:52-60 Ja-F '60. (MIRA 14:1)

(THYROID GLAND) (PROTEIN METABOLISM)

NOVIKOV, I.I.; LYUTTSAU, V.G.; ZOLOTOREVSKIY, V.S.

Intercrystallite concentration of microheterogeneity in aluminum-copper alloys at various speeds of crystallization. Fiz. met. i metalloved. 16 no.2:241-250 Ag '63. (MIRA 16:8)

1. Moskovskiy institut stali i splavov.
(Aluminum-copper alloys--Metallography)
(Crystallization)

ZOLOTAREVSKIY, V.S.

Accuracy of determining indicated characteristics of automobile gasoline engines by means of idling. Trudy Lab.dvig. no.5:111-126 '60. (MIRA 14:3)

(Automobiles--Engines--Testing)

SHIKUNINA, N.M.; ZOLOTAREVSKIY, V.S.

Possible causes for reduction of economic efficiency of a throttled gasoline engine. Trudy Lab.dvig. no.5:127-144 '60. (MIRA 14:3)

(Gas and oil engines)

L 46966-66 EWT(m)/EWP(w)/T/EWP(t)/ETI IJP(c) JD/WW/MG/JH

ACC NR: AT6024926 (A,N) SOURCE CODE: UR/2981/66/000/004/0170/0174

AUTHOR: Semenov, A. Ye.; Novikov, I. I.; Zolotarevskiy, V. S.; Mamin, A. S. 38 37 B+1

ORG: none

TITLE: Effect of manganese and zirconium on the hot cracking of alloys of the Al-Mg-Zn system

SOURCE: Alyuminiyevyye splavy, no. 4, 1966. Zharoprochnyye i vysokoprochnyye splavy (Heat resistant and high-strength alloys), 170-174

TOPIC TAGS: manganese containing alloy, zirconium containing alloy, aluminum zinc alloy, magnesium containing alloy, brittleness

ABSTRACT: The object of the work was to determine the effect of Mn and Zr on the hot cracking of alloys of the Al-Mg-Zn system containing various Mg/Zn ratios. The introduction of Mn into the alloys was found to cause a substantial increase in their hot cracking because of an expansion of the temperature range of brittleness, a decrease of the elongation per unit length, and an increase in linear shrinkage. Addition of 0.12-0.25% Zr to alloys of aluminum with magnesium, zinc, and manganese increases their resistance to the formation of crystallization cracks because of a narrowing of the brittleness range and an increase in elongation per unit length in this range. It is recommended that a high Zr content be used in the filler wire in welding Al-Mg-Zn-type alloys, and that the Mn content of these alloys be maintained close to the

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L 46966-66

ACC NR: AT6024926

lower limit given by the technical specifications, providing that the corrosion resistance of the welded specimens is checked. However, the introduction of Zr in amounts of no more than 0.15-0.17% is associated with the separation of intermetallic phases during the crystallization, and these phases not only decrease the plasticity of the cast and deformed material, but also raise the thermal stresses of a welded structure. Orig. art. has: 2 figures and 1 table.

SUB CODE: 11/ SUBM DATE: none/ ORIG REF: 005/ OTH REF: 001

Card 2/2 vmb

ZOLOTAREVSKIY, V.Ya.; KUZNETSOVA, A.N.

Method for catheterization of the urinary bladder in rabbits. Lab. delo [7] no.4:56 Ap '61. (MIRA 14:3)

1. Ozhogovyy otdel (zav. M.I.Shraber) i laboratoriya normal'noy i patologicheskoy fiziologii (zav. - prof. L.L.Shik) Instituta khirurgii imeni A.V.Vishnevskogo AMN SSSR, Moskva.
(CATHETER) (URINE)

USSR/General Problems of Pathology - Tumors. Comparative Oncology. Tumors of Man U

Abs Jour : Ref Zhur Biol., No 6, 1959, 27502

Author : Zolotarevskiy, V.Ya.
Inst :
Title : On Impairment of Motor Function of the Stomach in Carcinoma

Orig Pub : Sov. meditsina, 1958, No 7, 49-54

Abstract : 34 patients with carcinoma of the stomach were under observation; in 6 of them there was carcinoma of antral region, in 9 -carcinomatous stenosis of the pyloric part of the stomach, in 11-carcinoma of the small curvature and in 8-carcinoma of the stomach body. The motor function of the stomach was studied by the method of Bykov-Kurtsin (the method of balloon tonometry). In 31 patients the tonus of the stomach was lowered; in 25 atonia of the stomach was observed and in 6 -hypotonia.

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EXCERPTA MEDICA Sec.9 Vol.12/4 [illegible] April 1958

2230. MOTOR-SECRETORY FUNCTION OF THE STUMP OF THE STOMACH AFTER RESECTION OF ITS PROXIMAL PORTIONS (Russian text) - Zolotarevsk'y V. Ya. and Pechatnikova E. A. - KHIRURGIIA 1957, 6 (24-28) Graphs 2 Illus. 1

Fifteen patients were examined by Bikov Kuritsin's method at different moments after resection of the proximal portion of the stomach. The indication for these operations was cancer or ulcer of the cardia. It was established, that after such operation there is a great deal of mucus present in the gastric juice, and an almost complete absence of hydrochloric acid. In time, the distal stomach stump acquires the ability to retain its contents for 45 min. and to contract rhythmically, which leads to mechanical and thermal treatment of food and promotes its evacuation. These factors aid intestinal digestion. It has been proved, that the passage

of food through the duodenum after resection of the proximal portion of the stomach has a physiological advantage. Taking this into consideration, it is suggested that in suitable oncological indications, resection of the proximal part of the stomach is more rational than total gastrectomy.

ZOLOTAREVSKIY, V.Ya.; PECHATNIKOVA, Ye.A.

Motor and secretory function of the gastric stump after resection of proximal portion of the stomach [with summary in English]. Khirurgiia 33 no.6:24-28 Je '57. (MIRA 10:12)

1. Iz Instituta khirurgii AMN SSSR imeni A.V.Vishnevskogo (dir. - deystvitel'nyy chlen AMN S SSR prof. A.A.Vishnevskiy)
(GASTRECTOMY
motor & secretory funct. of stump after resection of proximal portion)

ZOLOTAREVSKIY, V.Ya. (Moskva)

Evacuatory function of the stomach after resection of its distal segment. Klin.med. 36 no.2:52-56 F '58. (MIRA 11:4)

1. Iz Instituta khirurgii imeni A.V.Vishnevskogo AMN SSSR (dir. - deystvitel'nyy chlen AMN SSSR zasluzhennyy deyatel' nauki prof. A.A.Vishnevskiy)

(GASTRECTOMY, in various dis.
cancer & peptic ulcer, eff. of distal segment gastrectomy on evacuation funct.)
(STOMACH NEOPLASMS, surg.
gastrectomy of distal segment, eff. on evacuation funct. (Rus))

ZOLOTAVIN, A. V.

USSR/Physics
Spectrum Analysis
Gold

Feb 49

"B -Spectrum of Au^{198}," B. S. Dzhelepov, A. A. Bashilov, A. V. Zolotavin, N. M. Anton'yeva, Sci Res Phys Inst, Leningrad State U, 3 pp

"Dok Ak Nauk SSSR" Vol LXIV, No 6

Studied the B-spectrum of Au^{198}, using a new magnetic spectrometer with improved focus (ϕ = 30°, P = 8 cm, $\Delta p/p$ = 1 %). Results correlated well with those of du Mond and Watson. Submitted by Acad P. I. Lukirskiy, 10 Oct 48.

PA 29/49T99

ZOLOTAVIN, A. V.

USSR/Nuclear Physics - Beta-Spectrum
Isotope

Jan 50

"Beta-Spectrum of Ho^{166}," N. M. Anton'yeva, A. A. Bashilov, B. S. Dzhelepov, A. V. Zolotavin, Phys Inst, Leningrad State U imeni A. A. Zhdanov, 4 pp

"Dok Ak Nauk SSSR" Vol LXX, No 3

Used magnetic spectrometer with improved focusing to study beta-spectrum of Ho^{166}. Thin layer of Ho_2O_3, irradiated by neutrons and deposited on strip of cigarette paper, was electron source. Electron radiation of Ho^{166} consists of continuous beta-spectrum with limit of about 1,840 kev and intense group of slow electrons less than 100 kev. Submitted 21 Sep 49 by Acad P. I. Lukirskiy.

158T80

ZOLOTAVIN, A. V.

USSR/Nuclear Physics - Radium 11 Feb 50
Gamma Rays

"Structure of the Gamma-Lines of RaC," A. A. Bashilov, N. M. Anton'yeva, A. V. Zolotavin, Phys Inst, Leningrad State U imeni A. A. Zhdanov

"Dok Ak Nauk SSSR" Vol LXI, No 5, pp 793-796

Latyshev and co-workers' previous studies of beta-spectrum of RaC had established that gamma-ray lines of conversion electrons were considerably wider than had been expected from instrumental data and that there were a number of very narrow peaks, in some cases 6 kev apart and in others 2.5 kev apart, on base line. This was interpreted as a fine structure of gamma-lines by Latyshev and his co-workers. In view of fundamental importance of this hypothesis, authors herein studied structure of these lines under conditions which eliminated distortion of lines by walls of glass ampoule and with a betaspectrometer having improved focusing. Fine structure in form observed by Latyshev and co-workers was not discovered. Submitted 13 Dec 49 by Acad S. I. Vavilov.

PA 165T47

USSR/Nuclear Physics - Nuclear Shells ZOLOTAVIN, A. V. 11 Feb 53

"Analysis of Nuclear Excited Levels With the Aid of the Model of Shells," I. K. Feker, L. A. Sliv, and A. V. Zolotavin

DAN SSSR, Vol 88, No 5, pp 781-784

Present exptl verification for the familiar nuclear model of shells, based on an analysis of data on spins, magnetic moments, and binding energies of stable isotopes, according to which an individual nucleon moves in a certain effective central field formed by the remaining nucleons; the state of a nucleon in this field is characterized by the 3 quantum numbers n, l, j (see M. Mayer, Phys Rev 78, 16, 1950). Presented by Acad P. I. Lukirskiy 9 Dec 52.

258T109

USSR/Nuclear Physics - Spectrometers

Card 1/1 [illegible]

Authors : [illegible]olotavin, A. V.

Title : [illegible]eta-spectrometer with double focus of the electron ray

Periodical : Izv. AN SSSR, Ser. fiz. 18/1, [illegible]7-147, Jan-Feb 1954

Abstract : The construction of a beta-spectrometer with double focus of the electron [illegible] and the results obtained with this instrument are [illegible] spectrometer with the utilization of [illegible] considera- [illegible] [illegible] pencils. [illegible] listed. Twenty-seven references. [illegible] Tables; graphs; drawings; illustrations.

Institution : The A. A. Zhdanov State University, Physics Institute, Leningrad

Submitted : November 30, 1953

ZOLOTAVIN, A.V.

USSR/Nuclear Physics - Beta-spectrometers

Card 1/1 Pub. 43 - 27

Authors : Zolotavin, A. V., and Sadkovskiy, V. S.

Title : Calculation of electron-optical parameters of a beta-spectrometer with double focusing of the electron pencil

Periodical : Izv. AN SSSR, Ser. fiz. 18/2, 215-226, Mar-Apr 1954

Abstract : Data are presented regarding the motion of electrons, source image form, [illegible] distribution in the image and the form of [illegible]

Institution : The A. A. Zhdanov [illegible], Physics Institute, Leningrad

Submitted : March 11, 1954

ZOLOTAVIN, A.V

120-6-5/36

AUTHORS: Zolotavin, A.V., Petrun'kin, A.M., and Khalilopova, N.N.

TITLE: On the Use of High Sources in Beta-spectrometers with Double Focussing (Ob ispol'zovanii vysokikh istochnikov v β-spektrometrakh s dvoynoy fokusirovkoy)

PERIODICAL: Pribory i Tekhnika Eksperimenta, 1957, No.6, pp. 27 - 30 (USSR)

ABSTRACT: An increase in the size of the source in magnetic beta-spectrometers with double focussing leads to an increase in the "illumination" L, defined as the product of the mean solid angle Ω used in the spectrometer and the area of the source S. The above result was studied by the authors in Ref.3 in the case of a field giving accurate focussing of a "flat" beam. In the case of line source such a field gives first order focussing in the following directions: in the plane of symmetry and in the direction of the axis of symmetry of the beam. In order to find the upper limit to the size of the source, the shape of defining slits, and the shape of the receiving slit, it is necessary to find the image of the linear source. Such calculations were carried out in Ref.1, using a maximum source half-height of $z_0 = 0.15\,\rho_0$ where ρ_0 is the radius of the

Card1/3 equilibrium orbit. Further calculations are reported in the

On the Use of High Sources in Beta-spectrometers with Double Focussing.

present paper. The field in the plane of symmetry $z = 0$ is taken to be of the form:

$$H(\rho) = \frac{1}{\rho}\left\{1 + \frac{1}{2}(\rho - 1) - \frac{3}{8}(\rho - 1)^2 + \right.$$
$$+ \frac{3}{16}(\rho - 1)^3 - \frac{15}{256}(\rho - 1)^4 -$$
$$\left. \frac{3}{512}(\rho - 1)^5 + \ldots \right\} \qquad (1)$$

where cylindrical polar co-ordinates are used and ρ_0 is the unit of length. The components of the magnetic vector in space were found by the method described in Ref.4, using $\mathrm{div}\underline{H} = \mathrm{curl}\underline{H} = 0$. As before, the radius of the equilibrium orbit was taken to be 10 000. 25 orbits were calculated for different initial conditions. The images of the upper half of a linear source produced under different conditions are shown in Fig.1. It is shown that in beta-spectrometers with

On the Use of High Sources in Beta-spectrometers with Double Focussing. 120-6-5/36

magnetic fields giving accurate focussing of a wide beam lying in the plane of symmetry, it is possible to use sources 0.3 % high and thus increase the "illumination" considerably. B.S. Dzhelepev collaborated. There are 1 diagram, 2 tables and 13 references, 5 of which are Slavic.

ASSOCIATION: Leningrad State University imeni A.A. Zhdanov. (Leningradskiy Gosudarstvennyy im. A.A. Zhdanova)

SUBMITTED: May 13, 1957.

AVAILABLE: Library of Congress

Card 3/3

Zolotavin, A. V.

USSR/Physical Chemistry. Some Questions Concerning Subatomic Structure of Matter. B-2

Abs Jour: Referat. Zhurnal Khimiya, No 2, 1958, 3477.

Author : Ye. P. Grigor'yev, L.V. Gustova, A.V. Zolotavin, B. Kratsik, T.V. Poleshchuk, O.V. Chubinskiy.

Inst : Leningrad University.
Title : On As^{76} Emission.
(Arsenic 76)

Orig Pub: Vestn. Leningr. un-ta, 1957, No 10, 37-39

Abstract: β and γ-emissions of As^{76} with $T_{\frac{1}{2}}$ = 26.75 hours are studied. The β-spectrum was studied with a β-spectrometer with double focussing. The γ-emission of As^{76} was measured with a magnetic spectrometer for measuring the hard γ-emission by recoil electrons. 5 β-lines and 6 γ-lines were revealed, their E is as follows: 350 ± 30, 880 ± 100, 1760 ± 40, 2410 ± 30, 2960 ± 20 kev and 1.21 ± 0.02, 1.43 ± 0.03, 1.77 ± 0.04, 2.10 ± 0.03, 2.42 ± 0.04 Mev correspondingly.

Card : 1/1

ZOLOTAVIN, A. V.

AUTHORS: Grigor'yev, Ye.P., Dzhelepov, B. S., Corresponding Member of the AN SSSR, Zolotavin, A. V., Kratsik, B., Preobrazhenskiy, B. K., Yanchevskaya, I. S.;

TITLE: The Conversion Spectrum of Ho^{160} (Konversionnyy spektr Ho^{160}).

PERIODICAL: Doklady AN SSSR, 1957, Vol. 117, Nr 1, pp. 53 - 56 (USSR)

ABSTRACT: The present paper investigates the conversion spectrum occurring in the radioactive transformation Er^{160} Ho^{160} Dy^{160}. The spectrum was investigated by means of a spectrometer with a double focusing. The conversion spectrum is homogeneous in both fractions: Er^{160} does not produce any conversion electrons and all the electrons belong to the Ho^{160}. The results of the investigations of the conversion spectrum are given in a table. The intensity of all the lines observed decreased in a period corresponding to the half-value period of the investigated fractions: 29 hours in the case of the erbium fraction and 5 hours of the holmium fraction. On measuring faults something is said, too. The general form of the conversion spectrum agrees with an earlier discovered form (reference 2). Moreover, some new facts could be explained, which permit the determination of the decay scheme of the Ho^{160}: The lines L_I+L_{II}, L_{III}, M and N of the transition taking place in the Ho^{160} were observed with 60 KeV. The decomposition into the components makes it possible to determine the relative intensity of the lines. The relationship $L_I:L_{II}:L_{III}$ =

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The Conversion Spectrum of Ho^{160}.

= o,2:1, 1:1,o determined by the authors for the transition 86,4 keV confirms the multipole property E 2 of which.The line E_e = 99,3 keV discussed in a preparatory paper (reference 2) was identified as the L-line of the transition 107 keV by the authors. Moreover the K-conversion line of this transition was found.The conversion line of the transition 298 keV on the K-shell is a narrow doublet with $\Delta E \sim$ 1 keV. Further particulars on these new discovered lines are given.The data given here and the data on the decay of the Tb^{160}(references 7,8,9,10,11,12)oan be used as fundament for the construction of the decay scheme of Tb^{160} and Ho^{160}.Such a scheme is illustrated by a graph. There are 3 figures, 2 tables, and 12 references, 5 of which are Slavic.

ASSOCIATION: **Physics Institute of the Leningrad State University im. A.A. Zhdanov** (Fizicheskiy institut Leningradskogo gosudarstvenno-go universiteta im. A. A. Zhdanova).

SUBMITTED: September 13, 1957

AVAILABLE: Library of Congress

Card 2/2

ZOLOTAVIN, A.V.

AUTHORS: Grigor'yev, Ye. P., Dzhelepov, B. S., Zolotavin, A. V., Kraft, O. Ye., Kratsik, B., Peker, L. K. 46-22-2-2/17

TITLE: The Decay of Tb^{160} and H^{160} and the Level Scheme of Dy^{160} (Raspad Tb^{160} i Ho^{160} i skhema urovney Dy^{160})

PERIODICAL: Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, 1958, Vol. 22, Nr 2, pp. 101-125 (USSR)

ABSTRACT: Radioactive Tb^{160} was here obtained by irradiation with slow neutrons of chemically pure (99.99%) Tb_2O_3. The position and relative intensity of 19 lines was carefully measured in the conversion spectrum. The decomposition of the known line 963 + 966 keV into two components is essentially new. The relative intensities of the γ-transitions were obtained by means of a division of the line areas through the corresponding photoelectric absorption factor. The values were because of the absorption of the γ-rays corrected in the source itself and at the walls of the cylinder, as well as because of the absorption of the photoelectrons in the target and in the slits of the counter. The obtained relative intensities

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of the γ-lines in the spectrum of photoelectrons are in the range of ±20% in agreement with those of references 5 and 6. The measurements of the conversion spectrum show that the soft component is twice as weak as the hard one. The multiplicity of these transitions apparently is equal and between the intensities of the γ-lines the same relation must exist. - Radioactive Ho^{160} was obtained by irradiation of a tantalum target with protons with an energy of up to 660 MeV. The erbium and holmium fractions were chromatographically separated from the target. In the conversion spectrum all conversion lines of Ho^{160} that had been obtained in reference 8 were also confirmed here and many new ones discovered. It is shown that the transitions to the upper levels are permitted ones. The small number of positrons (one positron) per decay is explained by the fact that at the low decay-energy the K-capture is dominating. When the decay to two upper levels is considered permitted K/β^+ can be determined according to the tables by Zweifel (ref. 10). The values 5400 and 400 thus obtained are very high, consequently a considerable part of all conversions of Ho^{160} must take place by way of K-capture. In the

The Decay of Tb^{160} and H^{160} and the Level Scheme of Dy^{160} 48-22-2-2/17

second short chapter the determination of the multiplicity of transitions is shown and its results are given in the form of a table. - In the third chapter the scheme of the Dy^{160}-levels is treated. A level scheme of Dy^{160} was here compiled with the use of all experimental data, theoretical considerations and the analogy with the neighboring nuclei. This scheme in the best manner corresponds to all data. All arguments confirming this scheme are given here and all facts contradicting this scheme or facts which cannot be explained are enumerated. There are 8 figures, 12 tables, and 19 references, 8 of which are Soviet.

ASSOCIATION: Fizicheskiy institut Leningradskogo gosudarstvennogo universiteta im. A. A. Zhdanova (Institute for Physics in the Leningrad State University imeni A. A. Zhdanov)

AVAILABLE: Library of Congress

Card 3/3 1. Terbium-Decay 2. Terbium isotopes (Radioactive)

ZOLOTAVIN, A. V.

48-22-2-12/17

AUTHORS: Grigor'yev, Ye. P., Zolotavin, A. V., Kuz'min, I. I., Pavlitskaya, Ye. D.

TITLE: On the Decay of Rh^{106} (O raspade Rh^{106})

PERIODICAL: Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, 1958, Vol. 22, Nr 2, pp. 194 - 197 (USSR)

ABSTRACT: This is a lecture held at the VII All Union Consultative Conference on Nuclear Spectroscopy, which was devoted to the investigation of the radiation accompanying the radioactive transmutation of $Ru^{106} \longrightarrow Rh^{106} \longrightarrow Pd^{106}$ with the help of a β-spectrometer with double focusing. (Ref 1). In this apparatus the diaphragms near to the source were removed and the thickness of the others increased to from 8 - 9 mm. The inside of the aparatus, at the rim of the diaphragms nearest to the source, was coated with beryllium plates. The conversion lines, the complete β-spectrum and the spectrum of photo electrons were investigated.

1) In the investigation of the continuous β-spectrum of Rh^{106} results were obtained, which do not correspond to the data

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On the Decay of Rh^{106}

by Alburger (Ref 2) with respect to the composition of this spectrum (intensity components). Therefore control experiments were performed with the β-spectra of P^{32}, As^{76} and K^{42}, which lead to the conclusion that the spectrometer accurately reproduces the form of the β-spectra up to 3 MeV, above this value, however, a distortion of the shape is possible. 2)The observation of internal conversion proved to be difficult, and it was only possible to measure the K and L conversion lines of the transition with an energy of 513 and 623 keV. In this case the data by Alburger correspond to the here obtained results, with the exception of the line L-623, which alone was treated in this paper. 3) The γ-spectrum of Rh^{106} was in this investigation examined according to the photo electron spectrum with a cylindrically symmetric source. This investigation was pushed in two directions: a) The photo electrons of the γ-transitions with 513, 623 and 1052 keV were measured, and their respective intensity was determined. Pb, Bi and Th served as target here. b) The range from 100 - 400 keV was investigated under the assumption that according to the decay scheme, the transition with the energies 150, 220, 240, 345 and 390 keV should be determined. The experiment proved to be difficult. No photo peaks could be found in this range

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SOV/48-22-7-12/26

AUTHORS: Grigor'yev, Ye. P., Dzhelepov, B. S., Zolotavin, A. V.

TITLE: Relative Intensities of γ-Transitions of Ho^{160}
(Otnositel'nyye intensivnosti γ-perekhodov Ho^{160})

PERIODICAL: Izvestiya Akademii nauk SSSR, Seriya fizicheskaya, 1958, Vol. 22, Nr 7, pp. 821-823 (USSR)

ABSTRACT: Reference is made to previous papers (Refs 1, 2). A knowledge of the accurate thickness of the bismuth target permitted to determine the ratio between the intensities of the lines $h\nu$ = 196 keV and of harder lines. In these measurements one and the same source was used. The energies and the intensities of the 6 strongest γ-transitions were determined. On the basis of the relative intensities of the γ-radiation and the results from the examination of the conversion spectrum of Ho^{160} it is possible to determine the factors of transition-conversion and their multipole order. This can be done if it is taken into consideration that the 196 keV transition takes place between the levels of the first rotation-band of Dy^{160} 4^+ and 2^+. It is assumed that the conversion factor of this

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transition is equal to the theoretical one for the electric quadrupole radiation. In this manner the conversion factors for the other transitions are obtained. The results completely substantiate the assumption made by the authors concerning the level scheme of Dy^{160} from reference 2. The positive parity of the 1695 keV level is now proved and a spin-value of 4 is very probable. The 729 keV transition in this case is E2, whereas the 646- and 538 keV transitions are a mixture of E2 and M1 or of E2 . The hard component of the doublet 963-966 keV is a pure E2 transition. Hence the multipole order of the 963 keV transition is M1 or E2 + M1. The 873- and 879 keV transitions most probably have a multipole order of E2 + M1. According to measurements of the spectrum of the photoelectrons the correctness of the computed intensities of the transitions of 538, 646, 873 + 879 and 963 keV is proved. Fluctuations within the limits of 30-40 % were found in the intensity of the 730keV transition. The staff of the OIYaI and of the Radium Institute assisted in the irradiation of the tantalum target and in the preparation of pure erbium- and holmium-preparations. There are 2 figures, 2 tables, and 4 references, 4 of which are Soviet.

Relative Intensities of γ-Transitions of Ho^{160} 07/46-22-7-12/26

ASSOCIATION: Nauchno-issledovatel'skiy fizicheskiy institut Leningradskogo gos. universiteta im. A. A. Zhdanova
(Scientific Research Institute of Physics at the Leningrad State University imeni A. A. Zhdanov)

Card 3/3

SOV/48-22-7-15/26

AUTHORS: Grigor 'yev, Ye. P., Dzhelepov, B. S., Zolotavin, A. V., Mishin, V. Ya., Prikhodtseva, V. P., Khol'nov, Yu. V., Shchukin, G. Ye.

TITLE: Radiation From As^{74} (Izlucheniye As^{74})

PERIODICAL: Izvestiya Akademii nauk SSSR, Seriya fizicheskaya, 1958, Vol. 22, Nr 7, pp. 831-838 (USSR)

ABSTRACT: In December 1957 the authors obtained a radiochemically pure preparation of As^{74} (~4 mCu) with a good specific activity. The characteristic features of this decay were examined and precisely determined. First the production of the preparation is described. This As^{74} was produced by a bombardment of germanium with deuterons with an energy of 10,8 MeV. The results of the investigation of β^+ - and β^--spectra are exposed. It is proved that the ground state of As^{74} is of an 2^--type. After the "bypass" [illegible] spectra had been subtracted the Curie diagrams for the soft components of both spectra proved to be rectilinear. In the back-ground of the β^--spectrum the K- and (L+M) conversion-lines of the transitions of 596 and 635 keV are clearly marked. The K-635 line is, without doubt,

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a transition of the type $2^+ \longrightarrow 0^+$, With the $h\nu$ = 596 keV transition, which is connected with the positron branch, conditions are more complicated, as the proportion of the K-capture must be known in order to be able to determine $a_{..}$. Two methods of the determination of $a_{..}$ are given. The spectrum of the γ-radiation of As^{74} was investigated by means of the recoil electrons. The relative intensity of three γ-lines was investigated with an equipment of a better resolution: The annihilation line, at $h\nu$ = 586- and the 635 keV line. With the help of an equipment of a lower resolution, but of a luminous intensity amplified by the hundredfold, it was attempted to find harder γ-lines in the radiation of As^{74}. The decay energy in the transmutation from $As^{74} \longrightarrow Ge^{74}$ gives rise to the assumption that the levels of Ge^{74} are excited up to those of 2500 keV. Actually in the spectral range of 1200 keV a pronounced superelevation of the counting rate above the quiet background connected with the softer lines was observed. The intensity of this line is smaller by a factor of 220 than that of the annihilation line. It is shown that in Ge^{74} the second level of excitation probably has an energy of 1200 keV. If this is true, it should be expected that a transition from the second level to the first one of

about 600 keV exists and that this level forms a doublet with the 596 keV line. The ramifications in the decay scheme of As^{74} are investigated. In the last chapter some remarks concerning the individual levels are given. As regards the conversion of the transition at $\Delta E = 596{,}3$ keV of Ge^{74} it is shown that in this transition the ratio is $K/L = 9{,}6 \pm 2{,}1$. In the investigation of the ratio K/β^+ in the As^{74} decay to the level at 596,3 keV of Ge^{74} it is shown that the ratio K/β^+ for this transition is normal. The level at 1200 keV of Ge^{74} is probably a second vibration level with the characteristic 2^+. The second excited level of Se^{74} is probably near 1300 keV and is of the type 2^+.
B. M. Isayev, I. P. Selinov, Ye. Ye. Baroni, Ye. N. Khoprov and their team collaborated in the work. There are 5 figures, 3 tables, and 15 references, 8 of which are Soviet.

ZOLOTAVIN, A.V.

AUTHORS: Grigor'yev, Ye. P., Dzhelepov, B. S., Zolotavin, A. V., Mishin, V. Ya. SOV/48-22-8-4/20

TITLE: Conversion Electron Spectrum of As^{73} (Spektr konversionnykh elektronov As^{73})

PERIODICAL: Izvestiya Akademii nauk SSSR, Seriya fizicheskaya, 1958, Vol. 22, Nr 8, pp. 927 - 930 (USSR)

ABSTRACT: The basic features of the decay scheme of As^{73} are already known. The scheme suggested in reference 1 and precised in the references 2-4 is given in figure 1. The authors used a β-spectrometer with a resolving power of 0,4% (Ref 5). The As^{73} source was obtained by a bombardment of natural germanium with deuterons with an energy of 10,8 MeV. The source contained As^{73} and residual quantities of As^{74}. The production method is described in reference 6. The information obtained permits to precise the transition type hν = 52,3 keV. At present no accurate conversion coefficients on the L-shell are available for low energies and for different values of Z. The ratio K_2/L_2 was compared with the coefficients computed by L.A.Sliv and I.M.Band which were obtained by an extrapolation of the coefficients (Table 2). It can be seen that a combined

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utilisation of the quantities K/L and α_L permits to exclude all types except M2. The authors investigated the possibilities offered in the selection of the characteristics of the second level of Ge^{73}. The initial data are obtained from the decay of As^{73}. The ground state of this nucleus is probably $p_{3/2}$. This value is predicted in the scheme by Mayer which is substantiated with a number of nuclei with odd A and 31 or 33 protons or neutrons. A comparison of the decay energy and of the life of As^{73} permits to determine $lg\tau f$ for an electron capture: $lg\tau f = 5,5$. This value is typical for allowed transitions. Hence it follows that the level at 66 keV Ge^{73} is of the type $p_{1/2}$, $p_{3/2}$ or $f_{5/2}$. In table 3 the upper limit of the ratios of the K-conversion lines of the transitions 66,3 and 52,8 keV is given. This ratio was computed according to Weisskopf (Vayskopf) under the assumption, that the multipole order of the transition 66,3 keV is E3 and M1. This is given as a comparison. The ratios L(M + N) for the transition 52,8 keV are of interest. The existence of 2 isotopes As^{73} and As^{74} in the preparation investigated by the authors permitted to compare their relative

amounts during measurement and to compute the ratio of their yields in the nuclear reaction. The authors expressed their gratitude to B.M.Isayev, I.P.Selinov, Ye.Ye. Baroni and Ye.N.Khaprov. There are 3 figures, 3 tables, and 8 references, 3 of which are Soviet.

ASSOCIATION: Nauchno-issledovatel'skiy fizicheskiy institut Leningradskogo gos.universiteta im.A.A.Zhdanova (Scientific Research Institute of Physics at the Leningrad State University imeni A.A.Zhdanov)

20-119-6-20/56

AUTHORS: Avotina, M. P., Grigor'yev, Ye. P., Zolotavin, A. V., Kratsik, E.

TITLE: The Radiation From Tb^{160} (Izlucheniye Tb^{160})

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol. 119, Nr 6, pp. 1127-1130 (USSR)

ABSTRACT: The continuous spectrum, the spectrum of conversion electrons and the spectrum of photoelectrons from radioactive Tb^{160} was measured by the authors by means of a spectrometer with double focussing. The sample was produced by irradiation of chemically pure Tb_2O_3 with slow neutrons. The continuous spectrum was examined by means of a source with a thickness of $\sim 1 mg/cm^2$, which was produced by coating Tb_2O_3 on a mica base with a thickness of $\sim 1,5$ mg/cm^2. The results of the measurements are compiled in a table. The conversion spectrum was measured by means of sources with a thickness of from 4 to 5 mg/cm^2. 19 lines were found, pertaining to 11 transitions to Dy^{160}. These results are also compiled in a table.

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The general form of the β-spectrum is illustrated by a figure. The lines pertaining to the transitions to Dy^{160} with the energies 878 and 965 keV are double. These two transitions were also investigated in the decay of Tb^{160}. The line corresponding to the transition with the energy 677 keV is either a single line or its weak component is so soft, that it cannot be separated from the harder line. The relative intensities of the γ-transitions were determined by division of the areas covered by the respective lines by the corresponding coefficient of photoelectronic absorption. The authors compared the relative intensities of some radioactive isotopes (e. g. J^{131}, Sb^{124}) known from publications with the intensities obtained on the basis of the measurements of the photo lines. For the discussed measurements the internal diameter of the source amounts to 0,3 mm. Therefore it should be possible to determine correctly the relative intensities in a wide energy range. The authors attempted the separation of the line 967 keV

into its two components. The results of the measurements prove the existence of two components, the ratio of their intensities, however, could only be roughly estimated: $I_{961}/I_{964} = 1^{+1,0}_{-0,5}$. There are 3 figures, 4 tables, and 2 references, 2 of which are Soviet.

ASSOCIATION: Fizicheskiy institut Leningradskogo gosudarstvennogo universiteta im. A. A. Zhdanova (Physics Institute of Leningrad State University imeni A. A. Zhdanov)

PRESENTED: September 13, 1957, by A. A. Lebedev, Member, Academy of Sciences, USSR

SUBMITTED: September 10, 1957

ZOLOTAVIN, A. V.

21(0) PHASE I BOOK EXPLOITATION SOV/2081

International Conference on the Peaceful Uses of Atomic Energy, 2d., Geneva, 1958

Doklady sovetskikh uchenykh; yadernaya fizika (Reports of Soviet Scientists; Nuclear Physics) Moscow, Atomizdat, 1959. 552 p. (Series: Its: Trudy, Vol. 1) 8,000 copies printed.

Eds. (Title page): A.I. Alikhanov, Academician; V.I. Veksler, Academician; and N.A. Vlasov, Candidate of Physical and Mathematical Sciences; Ed. of this volume: S.I. Broadov and B.P. Zaretskiy, Candidates of Physical and Mathematical Sciences; Ed. (Inside book): G.L. Smolyan; Tech. Ed.: Ye.I. Mazel'.

PURPOSE: This collection of articles is intended for scientific research workers and other persons interested in nuclear physics. The volume contains 43 papers presented by Soviet Scientists at the Second Conference on Peaceful Uses of Atomic Energy, held in Geneva in September 1958.

COVERAGE: It is divided into two parts. Part I contains 17 papers dealing with plasma physics and controlled thermonuclear reactions, and Part II contains 26 papers on nuclear physics, including problems of particle acceleration and of cosmic ray physics. The first paper by L.A. Artsimovich presents a review of Soviet work on controlled thermonuclear reactions. The remaining papers in Part I deal with particular problems in this field. [illegible]

papers in Part II deal in detail with various problems in nuclear physics, such as the fission of heavy atoms and their isotopes, and with the study of cosmic radiation by means of artificial earth satellites and rockets, described in a paper by S.N. Vernov. The Russian-language edition of the proceedings of the conference is published in 16 volumes. The first 6 volumes contain all the papers presented by Soviet scientists as follows: Volume (1), Yadernaya fizika (Nuclear Physics); Volume (2), Yadernyye reaktory i yadernaya energetika (Nuclear Reactor and Nuclear Power); Volume (3), Yadernoye goryucheye i metally (Nuclear Fuel and Reactor Metals), Volume (4), Khimiya radioelementov i radiatsionnykh prevrashcheniy (Chemistry of Radioelements and of Radiation Transformations); Volume 5, Radiobiologiya i radiatsionnaya meditsina (Radiobiology and Radiation Medicine); Volume (6) Polucheniye i primeneniye izotopov (Production and Use of Isotopes). The other 10 volumes contain selected papers presented at the Conference by non-Soviet scientists. In the present volume discrepancies between the English and Russian language edition of the proceedings have been noted in three articles where the texts are not identical; viz: Andrianov, et al, "High Current Pulsed Discharge"; Akhiyezer, et al, "High Frequency Plasma Oscillation"; and Bogolyubov, "Investigations of the Many-body Problem". The serial numbers of reports 2302 and 2304 are reversed in the English edition. Report 2211, by Shmelnikov, et al, is numbered 2536 in the English edition.

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AUTHORS: Grigor'yev, Ye. P., Zolotavin, A. V.

TITLE: Determination of the Form of the Pole Piece of a Magnet, Taking into Account the Edge Effect

PERIODICAL: Pribory i tekhnika eksperimenta, 1959, Nr 4, pp 97-99 (USSR)

ABSTRACT: The problem which the authors had to solve was that of finding the pole piece profile for a β-spectrometer with double focussing and ensuring that the electron beam is focussed even in the regions close to the edges of the magnet. Since the edge effect problem has not as yet been solved, the authors use a semi-empirical scheme which ensures that the required field distribution is realized to about 1.5%. If the method is used to reshape the pole pieces again, the required field may be obtained with an accuracy of 0.3%. Fig 3 shows the final profile of the spectrometer pole piece, ensuring double focussing over an angle of $\pi\sqrt{2}$ for the field suggested by Pavinskiy in Ref 6. The equilibrium orbit radius is 125 mm. The profile was calculated assuming μ = const along r . The experimental field coincides with the theoretical over 7% of the gap

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Determination of the Form of the Pole Piece of a Magnet, Taking into Account the Edge Effect

radius. Acknowledgment is made to B. S. Dzhelepov for valuable discussions. There are 3 figures and 7 references, of which 3 are Soviet, 1 Swedish and the rest are English.

ASSOCIATION: Leningradskiy gosudarstvennyy universitet (Leningrad State University)

SUBMITTED: June 28, 1958.

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21(3) SOV/48-23-2-2/20

AUTHORS: Grigor'yev, Ye. P., Zolotavin, A. V., Klement'yev, V. Ya., Sinitsyn, R. V.

TITLE: Determination of the Relative Intensities and Conversion Coefficients of Transitions Produced During the Decay of Se^{75} (Opredeleniye otnositel'nykh intensivnostey i koeffitsiyentov konversii perekhodov, voznikayushchikh pri raspade Se^{75})

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1959, Vol 23, Nr 2, pp 159-184 (USSR)

ABSTRACT: At the beginning, the authors report on data obtained up to now on the $Ge^{75} \longrightarrow As^{75} \longleftarrow Se^{75}$ decay, and the spectrometers, sources and conditions of measurement of the investigations explained in this paper are described as follows: the magnetic spectrometer used for measurement had a double focusing, and the half width of electron lines in the spectrometer conditioned by the apparatus amounted to 0.4%. The conversion spectrum was measured in the presence of radiation sources of different thickness: 0.05, 0.25, 5 mg/cm^2. For the purpose of determining the spectral lines of photoelectrons thin targets of silver, lead, bismuth and other elements were used. The determinations covered 1) the relative intensities I_γ of the spectral lines

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Determination of the Relative Intensities and Conversion Coefficients of Transitions Produced During the Decay of Se^{75}

of photoelectrons of Se^{75}; the authors recorded the whole spectrum with Bi-target $\sigma = 0.1$ mg/cm^2, the energy range up to $\sim$ 100 kev with Ag-targets $\sigma = 0.25$-0.05 mg/cm^2, the range up to 401 kev inclusive with As-target, $\sigma = 0.25$ mg/cm^2, the line 572 kev with particularly thick Ta, Pb, and Bi-targets up to $\sigma = 80$ mg/cm^2 (Figs 2-6). The energies obtained and the corresponding I_γ are listed in table 1. The intensity of the transition $h\nu = 265$ kev was assumed as a reference quantity equal to 100. For comparison, tables 1 and 2 contain also data obtained by other authors. For the purpose of checking the spectral sensitivity of the apparatus the relative intensities of γ-lines of Sb^{124} were compared with the values mentioned in paper (Ref 47), in which investigations were carried out by means of the calibrated standard γ-spectrometer "Elotron" (Tables 4, 5 and table 6 give a comparison with Tb^{160}). A possible error in the determination of $I_\gamma \leq 15\%$ results from the comparisons. 2) The authors measured the electron spins of internal conversions of Se^{75}. They obtained 26 conversion lines produced by 12 transitions in As^{75} (Figs 7-12),

Determination of the Relative Intensities and Conversion Coefficients of Transitions Produced During the Decay of Se^{75}

among which there are also the lines of Auger electrons K-LL, K-LM, K-MM. Their energies, intensities I_γ and origin are listed in table 7. According to a comparison with data obtained by other authors the best accordance was found with Schardt and Welker (Ref 10). For the purpose of determining the conversion coefficients from I_γ and I_K two methods were applied:

a) from a comparison of the experimental values I_K/I_γ with the conversion coefficients of transitions 265, 280, 305, 401 kev according to Bashilov and Il'in (Ref 45)(Table 8); the mean value $\alpha_K/(I_K/I_\gamma)$ was used for determining the conversion coefficients of the other transitions; b) from the E1 transition of the transitions 121, 235, 401 kev the conversion coefficients of the other transitions were determined in the above-mentioned way. The values obtained in both ways agree well with one another. On the basis of a comparison between the theoretical and experimental values α_K the authors determined the multipole order of all transitions obtained (Table 9). According to the analysis of the scheme of As^{75} decay by means of Coulomb excitation and inelastic neutron

Determination of the Relative Intensities and Conversion Coefficients of Transitions Produced During the Decay of Se^{75}

scattering the authors determined the existence of the excitation states ~ 200, 281, 574, 780, 814, 1020, 1250, 1633 kev. The spectrum of Ge^{75} was studied by the method of $\beta^- - \gamma^-$ coincidence and the levels 199, 265, 477, 628 kev were obtained (Table 10). The γ-spectrum and γ-γ-coincidence from papers (Refs 10 and 25) are given in table 11. Furthermore, the quantum characteristics of the ground state As^{75}, Se^{75}, Ge^{75} were determined to be $3/2^-$, $5/2$, $1/2^-$. The quantum characteristics of the levels 265, 280 and 401 kev were determined as well. The intensity equilibrium in the Se^{75} decay is mentioned in tables 13, 14. The quantities $lg\ ft$ are in accordance with selection rules. According to these results the scheme of the $Ge^{75} \longrightarrow As^{75} \longleftarrow Se^{75}$ decay is established (Fig 13). Similarities of parity with neighboring nuclei are contained in table 15. On the basis of the one-particle model the authors give two possible explanations of the ground state of the nuclei $_{34}Se^{75}_{41}$ and $_{33}As^{75}_{42}$ as well as of the levels of As^{75} at 199, 256, 280, 305 and 401 kev in table 17. There are 13 figures, 17 tables, and 55 references, 19 of which are Soviet.

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Determination of the Relative Intensities and Conversion Coefficients of Transitions Produced During the Decay of Se^{75}

ASSOCIATION: Nauchno-issledovatel'skiy fizicheskiy institut Leningradskogo gos. universiteta im. A. A. Zhdanova
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SOV/48-23-2-4/20

21(7)

AUTHORS: Grigor'yev, Ye. P., Dzhelepov, B. S., Zolotavin, A. V.

TITLE: Decay of $Yb^{166} \rightarrow Tu^{166} \rightarrow Er^{166}$ (Raspad $Yb^{166} \rightarrow Tu^{166} \rightarrow Er^{166}$)

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1959, Vol 23, Nr 2, pp 188-190 (USSR)

ABSTRACT: An error occurred in the spectral analysis of this reaction since the energies of the most intense transitions in Tu^{166} produced by decay of Yb^{166} and in Er^{166} produced by Tu^{166} were near 80 kev in both cases. For the purpose of explaining and determining the levels the authors studied the conversion spectra by means of the β-spectrometer with double focusing and a half width of lines of 0.3%. The resolving power permitted the separation of $L_I + L_{II}$, L_{III} and M and N lines.

Table 1 shows the corresponding lines of transitions 81.0 kev in Tu^{166} and 79.4 kev in Er^{166}. Transition 79.4 in Er^{166} agrees well with the theoretical transition type E2. M1 represents the transition type at 81.0 kev in Tu^{166}. A distinctly marked difference results from a comparison of the relative intensities of conversion lines of Tu^{166} and Er^{166} in

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equilibrium state with values obtained by other authors (Ref 3) (Table 2). The conversion coefficient for Er^{166} with $\alpha_K = 1.8$ for E2 transition and Tu^{166} for transition M1 amounts to 3 ± 1 and 4, respectively. The ratio of intensities of the individual transitions in Tu^{166} and $Er^{166} = 0.75 \pm 0.3$. The authors thank the researchers of the OIYaI and RIAN for radioactive sources, O. V. Larionov, M. K. Nikitin,, researchers of the LGU for separation of the Yt- and Tu fraction, as well as L. K. Peker for discussions. There are 3 figures, 4 tables and 5 Soviet references.

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SOV/48-23-2-5/20

21(7)
AUTHORS: Grigor'yev, Ye. P., Zolotavin, A. V., Kratsik, B.

TITLE: Radiation of Tb^{160} (Izlucheniye Tb^{160})

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1959, Vol 23, Nr 2, pp 191-203 (USSR)

ABSTRACT: In the present paper the authors investigated the β-spectrum and the spectra of internal and external conversions of β-transitions accompanying Tb^{160} decay. In addition to experimental data known about Tb^{160} (Refs 1, 2), this paper contains further data on the β-spectrum with thin radiation sources as well as on some transitions between the levels of the Dy^{160} nucleus. Tb_2O_3 with a purity of 99.99% was irradiated in the reactor. Within the individual ranges of energy < 250 kev, 200 - 600 kev, > 600 kev sources with different surface density were used. Data and comparison with results obtained by other authors are contained in table 2. The analysis of the spectrum obtained was performed on the assumption of a Fermi shape and a unique shape of the spectrum according to the method devised by Curie-Richardson-Pakstone. The

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authors obtained excitation levels from which β-transitions occurred at 1565, 1358, 1264, 966, 865 kev. The level 1156 kev resulted from the decay of Ho^{160}. Limit energies and relative intensities of the softer components coincide in both analyses. The spectrum of conversion electrons was recorded with the sources applied in recording the β-spectrum. Besides the transitions already obtained an additional one was found at 289 kev. The other resulting energies and intensities are in accordance with those of the β-spectrum. (Table 3). The conversion lines of the transition at 1273 kev were studied and it was found that they are composed of the lines K-1273, L-1273 and K-1314. The spectrum of γ-rays was measured by means of Ag, Au, Bi and Th targets. The conversion coefficients were compared to the theoretical values contained in paper (Refs 14, 19), in which the 1973 kev transition was regarded as an E2 transition. The multipole orders of the individual transitions were determined according to the theoretical and experimental values of α_K.

The theoretical values were adopted from tables published by Sliv and Band (Refs 14, 19). On the basis of the results obtained the decay scheme was established, which was discussed in detail. For the purpose of determining the intensities and intensity equilibria the intensities of transitions into the ground state with $I_{\gamma 86} + I_{\gamma 966} + I_{\gamma 1201} = 100$ were used.

There are 5 figures, 9 tables, and 20 references, 11 of which are Soviet.

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SOV/48-23-7-17/31

21(7)

AUTHORS: Grigor'yev, Ye. P., Dzhelepov, B. S., Zolotavin, A. V.

TITLE: On the Transitions $Er^{160} \longrightarrow Ho^{160}$ and $Yb^{166} \longrightarrow Tu^{166}$ (O perekhodakh $Er^{160} \longrightarrow Ho^{160}$ i $Yb^{166} \longrightarrow Tu^{166}$)

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1959, Vol 23, Nr 7, pp 864-867 (USSR)

ABSTRACT: In the introduction, it is ascertained that in a number of papers the decays $Er^{160} \longrightarrow Ho^{160} \longrightarrow Dy^{160}$ and $Yb^{166} \longrightarrow Tu^{166} \longrightarrow Er^{166}$ have been investigated, and that the authors in the present paper are concerned with some peculiarities of the first transitions of these chains. It is pointed out that two isomeric states of the isotope Ho^{160} are known, which have different half-lives and the quantum characteristic of which is not known. By theoretical investigations, it was found out that the lower excited states of the odd-odd nuclei must necessarily have two levels which have the same parity. The types of the states of the isotope Er^{160} are investigated. Allowed and first forbidden decays take place in the isotope

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Er^{160}, and it is concluded that the energies of the transitions $Er^{160} \longrightarrow Ho^{160}$ do not exceed 1 Mev. The authors further assert that the Er^{160}-decays passing the so-called five-hour isomer do not take place on the levels $5^+, 2^-$ and 2^+ but on any other higher level . In the investigation of the decay $Yb^{166} \longrightarrow Tu^{166}$ it is first ascertained that the odd-odd nuclei of the isotope Tu^{166} have an excited level with the energy of 81 kev, and they are assigned to the type M1. Further it is stated that other levels of the isotope Tu^{166} are not known, and that a positron spectrum corresponding to the transition $Yb^{166} \longrightarrow Tu^{166}$ was not found. The mass defect of the Yb^{166}- and Tu^{166}-nuclei is indicated with 117 kev (according to Cameron) and with 436 kev (according to Riddel), and the decay energy of Yb^{166} is evaluated with not over 1,000 kev. The authors thank

L. N. Zyryanova for contributing her knowledge on the β-systematics, and L. K. Peker for the discussion of the results. There are 3 figures and 19 references, 8 of which are Soviet.

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SOV/48-23-7-18/31

21(7)

AUTHORS: Grigor'yev, Ye. P., Dzhelepov, B. S., Zolotavin, A. V., Kratsik, B., Bitterlikh, G.

TITLE: The Decay of Ho^{160} and the Level Scheme of Dy^{160} (Raspad Ho^{160} i skhema urovney Dy^{160})

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1959, Vol 23, Nr 7, pp 868-874 (USSR)

ABSTRACT: In a previous paper (Ref 1), the authors had already determined the level scheme of Dy^{160}, but in considering all factors they come to the result that the upper level does not amount to 1718 kev , but that in the decay of the isotope Ho^{160} excited states with energies up to 2900 kev occur. In the present paper, results of an investigation of the transitions with high levels of the isotope Dy^{160} are put forward. The spectra of the positrons and of the electrons of the internal conversion were recorded by a β-spectrometer. The obtaining of the radioactive sources is dealt with, and the investigation of the β^+-spectrum in the range of weak energies is described. In the range under

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160 kev, a positron excess is observed which is connected with a soft component. The components of the spectrum are shown in a diagram (Fig 1). The balance of the intensities for the transitions in the isotope Ho^{160} shows that the transition with 60 kev amounts to 60% of the decay. It is further concluded that the number of positrons in the decay is equal to 0.36%. The authors found 55 new conversion lines which are compiled in table 2 together with the known lines. The experimental results were compared with the theoretical results, and it became clear that some L-lines are superimposed by K-lines of other transitions. Figures 2 and 3 show two ranges of the spectrum of the conversion electrons, the half-width of these lines is indicated, and it is ascertained that in figure 2 there is a group of lines the identification of which is very difficult. From the results obtained hitherto in this

paper, and in other papers, the extensive level scheme of the isotope Dy^{160} is set up, and the balance of the intensities in Ho^{160} is evaluated. There are 4 figures, 3 tables, and 4 Soviet references.

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24(5)
AUTHORS: Grigor'yev, Yu. P., Zolotavin, A. V. SOV/56-36-2-7/63

TITLE: On the Relative Probabilities of the Photoeffect in Shells and Subshells of the Atom (Ob otnositel'nykh veroyatnostyakh fotoeffekta na obolochkakh i podobolochkakh atoma)

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1959, Vol 36, Nr 2, pp 393-400 (USSR)

ABSTRACT: In their introduction the authors first discuss several theoretical works concerning investigations of the photoeffect in the K-shell; Heitler (Gaytler)(Ref 1) investigated the relativistic case and supplied a formula of the photoeffect cross section in Born's approximation, Stobbe (Shtobbe)(Ref 2) and Hall (Khell)(Ref 3) published more accurate results. Sauter (Zauter)(Ref 4) and Hulme (Khulm)(Ref 5) calculated the probability for the photoeffect in Born's approximation by using a relativistic wave function, and Hall (Ref 6) derived a simple formula for $h\nu \gg mc^2$. Hulme et al. (Ref 7) calculated τ_K still more accurately for 3 elements and 2 different γ-energies. Experimental works: a) Marty (Marti)(Ref 8), measurements of

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