"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

20247
S/138/61/000/001/004/010
A051/A029

The Change in the Contact Area in Deformation of Rubber Cylinders and Rings

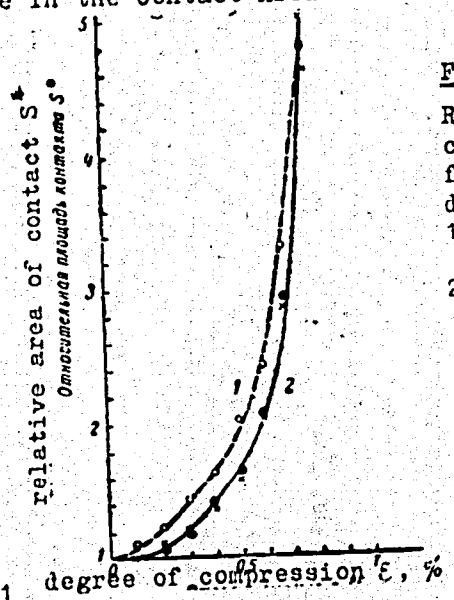

Figure 3:

Relationship of the relative area of contact to the degree of compression for samples compressed in the axial direction:

1) section area calculated from the condition of constant volume,
2) experimental values (X - cylinders 8X10, θ - cylinders 0X10)

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A051/A029

The Change in the Contact Area in Deformation of Rubber Cylinders and Rings

Figure 4

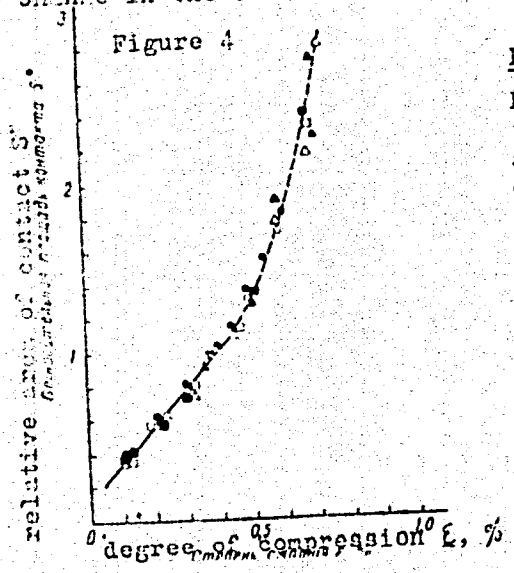

Figure 4:

Relationship of the relative area of contact to degree of compression for rings and samples deformed according to the diagrams b, c, d (see Fig. 1):

area for rings (diagr. b): O-rings 104x14 mm; ⊖-rings 52x7.5 mm
area for samples (diagr. c): □-samples 10x10 mm; ■-samples 8x10 mm
area for samples (diagr. d): Δ-samples 10x10 mm; ▲-samples 8x10 mm
solid curve - area values calculated according to formula (5), dotted curve according to formula (6).

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The Change in the Contact Area in Deformation of Rubber Cylinders and Rings

Figure 5

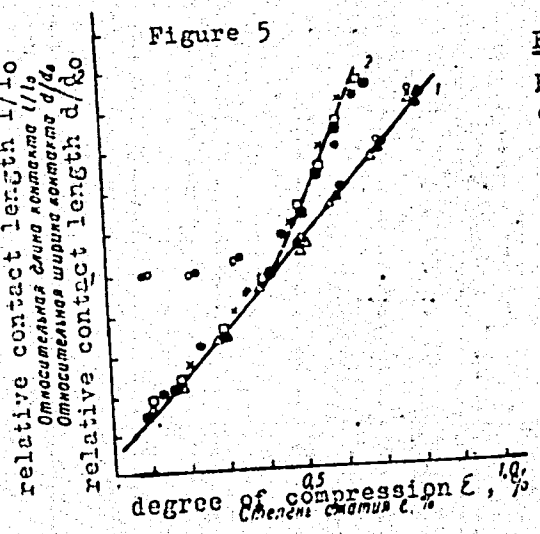

Figure 5:

Relationship of the length and width of contact to the degree of compression:

length of sample contact (diagr. d):
O-samples 10x10 mm, ●-samples 8x10 mm
width of contact of samples (diagr. d):
△-samples 10x10 mm, ▲-samples 8x10 mm
width of contact of samples (diagr. c):
□-samples 10x10 mm, ■-samples 8x10 mm
width of contact of rings (diagr. b):
x-rings 104x14mm, ✱-rings 52x7.5 mm
1 - calculations according to formula (2)
2 - calculations according to formula (3)

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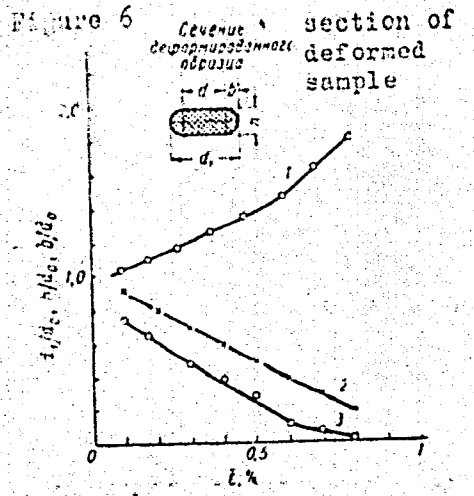
S/138/61/000/001/004/010
A051/A029

The Change in the Contact Area in Deformation of Rubber Cylinders and Rings

Figure 6



section of deformed sample

Figure 6:

Relationship of the relative width of the sample section deformed according to diagram d to the degree of compression ε:

1 - d_1/d_0,
2 - h/d_0,
3 - $2b/d_0$.

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

20503
S/096/61/000/005/002/003
E194/E255

18 8300 1138 1454

AUTHORS: Ratner, A. V., Candidate of Technical Sciences and Kagan, D. Ya., Candidate of Technical Sciences

TITLE: An Investigation of the Corrosivity of Gland Packings

PERIODICAL: Teploenergetika, 1961, No. 5, pp. 35-39

TEXT: After being kept for a period in store, steam fittings received from the manufacturers after hydraulic testing often have local corrosion of spindles at the place of contact with the gland packing. This contact corrosion is due to the presence of different electrode potentials between the metal and the packing. In addition, it is associated with the formation of oxygen concentration cells that result from different concentrations of oxygen in the electrolyte along the microscopic gap between the gland and the spindles. This kind of corrosion occurs when the concentration of oxygen in the water exceeds 0.1 mg/kg. The trouble is less likely to happen in a turbine in service because the valve is in contact with de-aerated water so that there is little or no corrosion. Drying the fittings at a temperature of 100°C is not a satisfactory remedy because in practice not all the

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S/096/61/000/005/002/003
E194/E255

An Investigation of the Corrosivity of Gland Packings

water can be driven out. The best methods seem to be either to use non-corrosive packings or spindles with a corrosion-resistant surface. The corrosivities of various packing materials were tested in a special rig in which a spindle of appropriate steel was fitted into a gland chamber and suitably compressed. Holes were made at the bottom and the device was subjected to a hydraulic pressure of 150 to 200 atm. During this pressing period the water passed through the packing and appeared at the outlet holes. The set-up was then removed from the press and stored in a horizontal position for a week in air and then each week it was again hydraulically pressed. After a certain test time of up to six months the samples were dismantled: the surfaces of the spindle examined and the depth of the corrosion pits was measured. From the test results which are given it is found that all the packings based on asbestos and also packings based on graphite and electrode carbon cause corrosion. The worst corrosion was observed with asbestos packings either consisting of pure asbestos or armoured with brass wire. Asbestos packings without brass wire armouring,

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S/096/61/000/005/002/003
E194/E255

An Investigation of the Corrosivity of Gland Packings

or armoured but sized with rubber and talc, were less corrosive. Other pearlitic low-alloy and also carbon steels without surface anti-corrosive treatment give similar test results and usually showed similar electrode potentials. The corrosivity of asbestos packings was improved by washing them or by rubbing them with zinc powder. The graphite packings were made less corrosive by the addition of 5% by weight of aluminium or zinc powder, thus making the metal surface cathodic relative to the packing. An asbestos packing was washed by boiling in condensate for three hours with periodic extraction of water samples. After one hour's boiling, the alkalinity of the solution was 0.4 mg equiv/litre and the content of chloride ions 1.33 mg/litre; further tests showed that by this time most of the extractable material was already out. Tests were then made on spindles of steel ЭИ-909 (EI-909) without anti-corrosive protection of the surface. The results show that washing the asbestos packings and particularly dusting them with zinc powder reduces but does not prevent corrosive activity. The addition of aluminium or zinc powder to graphite completely prevents corrosion of untreated pearlitic steel. Corrosion of

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E194/E255

An Investigation of the Corrosivity of Gland Packings

pearlitic steel in contact with packings may also be prevented by anti-corrosive treatment of the spindle, for example, by diffusion chromating. Such a coating not only increases the corrosion resistance but considerably improves the resistance to scoring and erosion of the spindles. Accordingly corrosion tests were made on spindles of pearlitic steel ЭИ-723 (EI-723) that had been diffusion chromated, to a depth of 60-80 microns. In none of the spindles tested was there any corrosion, though the same packing materials had given corrosion with untreated spindles. In order to explain the results obtained, electrode potential tests were made on the various steels and the graphite-based packing materials. It is found that austenitic steel ЭИ-612 (EI-612) has a higher positive potential than steel EI-909 or steel EI-723 and consequently, on contact with the packing it should be more resistant to corrosion than pearlitic steels. This was confirmed experimentally. Un-reinforced pearlitic steels EI-909 and EI-723 should corrode most severely because the initial potential is negative. They should be particularly corroded in contact with graphite, as it has

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E194/E255

An Investigation of the Corrosivity of Gland Packings

a more negative potential than these steels. Measurements of the potentials of chromated steel EI-909 and EI-723 showed that the chromating increases the positive potential as compared with the untreated steels, so that it becomes more corrosion-resistant. There are 5 figures and 3 tables.

ASSOCIATION: Vsesoyuznyy teplotekhnicheskiy institut (All-Union Institute of Heat Engineering)

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

S/096/60/000/011/007/018
E194/E184

18.8300

AUTHORS: Laguntsov, I.N. (Candidate of Technical Sciences), Ratner, A.V. (Candidate of Technical Sciences), and Zelenskiy, V.G. (Engineer)

TITLE: The Causes of Rapid Wear in and Selection of Materials for Components of the Flow Parts of High-Pressure Feed Pumps

PERIODICAL: Teploenergetika, 1960, No 11, pp 55-59

TEXT: The main object of this article is to make practical recommendations about the materials to be used for various parts of high-pressure feed pumps together with some recommendations about the design; this is done on the basis of service and laboratory tests. Because of heavy wear experienced in high-pressure feed pumps at power stations, the All-Union Thermo-Technical Institute carried out investigations at six high-pressure power stations selected in such a way that it was possible to relate the performance of the feed pumps to the materials used in them and other design features. Particularly heavy wear is experienced in flow parts of the pumps including runners, guide vanes, glands and other parts. Not only pump design but also operating conditions

[illegible] was found in [illegible] steels and sulphided steel.

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S/096/60/000/011/007/018
E194/E184

The Causes of Rapid Wear in and Selection of Materials for Components of the Flow Parts of High-Pressure Feed Pumps

Certain stainless steels have very high erosion resistance. The rate of erosive wear as function of time was tested on a number of steels and the results for grade Ст. 20 (St. 20) are plotted in Fig 3. In a considerable number of steels at high rates of flow the rate of erosive wear is proportional to the third power of the rate of flow. The influence of temperature on rate of wear is shown by the graphs in Fig 4 and in general the rate of wear is directly proportional to the condensate temperature up to 200 °C. It was concluded from the work and from published data that the main cause of short feed-pump life is rapid erosive wear of components in the flow part. Accordingly, it is most important to select the materials to be used for such parts and also the rates of flow with great care. Typical design effects that can lead to heavy wear are also mentioned. The quality of the feed water has an important influence on the life of parts of cast iron, carbon steels and bronze. Increasing the loading on a pump increases the speed and alters the character of the flow and can lead to very heavy wear. Specific recommendations are then made about the

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84921

S/096/60/000/011/007/018
E194/E184

The Causes of Rapid Wear in and Selection of Materials for Components of the Flow Parts of High-Pressure Feed Pumps

materials to be used in different parts of the pumps. Thus, the flow parts of pumps, depending on the rate of flow of water should be made of chromium (Cr = 13-20%) and chrome nickel steels. Steel 2Ж13 (2Kh13) was particularly successful for runners and guide vanes but other hard chrome-nickel steels can also be satisfactorily used. Glands which are subject to mechanical wear as well as erosion present a difficult problem and it is recommended to use coatings made with electrodes grades ЦН-6 (TsN-6) or ЦН-2 (TsN-2), or steel ЭИ-481 (EI-481), steel 2Ж13 (2Kh13), sulphided and chromium treated steel ЭИ-909 (EI-909). These materials resist mechanical and erosive wear. A number of other detailed recommendations are made about the kind of materials to use. The importance of good surface finish is emphasised. If attention is paid to all these measures the service life of high-pressure feed pumps may be greatly extended.
There are 4 figures.

ASSOCIATION: Vsesoyuznyy teplotekhnicheskiy institut (All-Union Thermo-Technical Institute)

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APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

GORELIK, B.M., BUKHINA, M.F., RATNER, A.V., Prinimali uchastiye:, VASIL'YEV, O.B., KOROLEVA, V.M.

Investigating the compression of round section rubber rings and cylindrical specimens. Nauch.i res. 19 no.2:23-28 F '60. (MIRA 13:6)

1. Nauchno-issledovatel'skiy institut resinovoy promyshlennosti. (Rubber--Testing)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

83662

15.9300
11.2314

S/138/60/000/002/006/009
A051/A029

AUTHORS: Gorelik, B.M., Bukhina, M.F., Ratner, A.V.

TITLE: An Investigation of the Compression in Circular and Cylindrically-Shaped Rubber Rings

PERIODICAL: Kauchuk i Rezina, 1960, No. 2, pp. 23 - 28

TEXT: The results of an investigation on the possibility of determining the elasticity of various rubber parts on the basis of the elastic properties of the rubber used are submitted. Several methods have been proposed by different authors (Refs. 1 - 17), the complexity of the problem, however, renders previous methods inadequate. They are suitable only for simple parts under low degrees of compression. Rings with a circular cross-section and cylindrical in shape were chosen in this investigation as the objects of study. It was proven experimentally that the hypothesis on the constancy of the average diameter of the ring under axial compression holds true. The elastic characteristics of the rubber rings and cylindrical parts under conditions of axial and radial compression within the limits of 5 to 7% deformation were determined. It was established that in calcu-

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A051/A029

An Investigation of the Compression in Circular and Cylindrically-Shaped Rubber Rings

lating the stress on the true area of contact a single curve of deformation is obtained for rings of various sizes under axial and radial compression. It is shown that the deformation characteristics of rubber rings under axial and radial compression follow the pattern of the deformation characteristics obtained under radial compression of the cylindrical samples limited at the end planes. Samples with a form factor (i.e., the ratio of the surface under stress to the free surface) of less or equal to 1, were chosen for the experiment, so that the elastic characteristics of the material could be determined rather than that of the sample and so that the effect of friction on the contact might be disregarded. The experimental method is described in detail and the sizes of the investigated rings and cylinders are listed. Figure 5 is the graph showing the overlapping deformation curves of the four investigated types of rubber with a hardness of 40-60 according to TM-2 (TM - 2) These curves can be used in estimating the relationship of the contact pressure to the degree of compression for a ring of any size made of rubber with a hardness of 40 - 60 according to TM - 2. O. B. Vasilyev

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A051/A029

An Investigation of the Compression in Circular and Cylindrically-Shaped Rubber Rings

and V.M. Koroleva participated in the work. There are 6 figures and 22 references: 10 Soviet and 12 English.

ASSOCIATION: Nauchno-issledovatel'skiy institut rezinovoy promyshlennosti (Scientific Research Institute of the Rubber Industry)

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APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

ARISTOV, M.Ya., inzh.; RATNER, A.V., kand.tekhn.nauk

Experimental determination of the maximum permissible load for pipes made of austenite steel. Teploenergetika 7 no.7: 69-76 Jl '60. (MIRA 13:7)

1. Vsesoyuznyy teplotekhnicheskiy institut.
(Pipe--Testing)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

RATNER, A.V., kand.tekhn.nauk; LEONOVA, L.G., inzh.

Ability of corrosion-resisting feed pump materials to withstand scratching. Elek.sta. 31 no.4:30-32 Ap '60. (MIRA 13:7)

(Pumping machinery)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

GULYAYEV, V.N., kand.tekhn.nauk; RATNER, A.V., kand.tekhn.nauk;
SHAPOROVSKAYA, Z.A., inzh.

Sleeve connections for pipelines. Elek.sta 31 no.1:10-12
Ja '60. (MIRA 13:5)
(Pipelines)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

RATNER, A.V., kand.tekhn.nauk, red.; MELEYEV, A.S., red.; LARIONOV, G.Ye., tekhn.red.

[Accessories for high and ultrahigh-pressure electric power stations] Armatura dlia elektrostantsii vysokogo i sverkhvysokogo davlenii. Pod red. A.V.Ratnera. Moskva, Gos.energ.izd-vo, 1960. 174 p. (MIRA 13:6)

1. Gosudarstvennyy trest po organizatsii i ratsionalizatsii rayonnykh elektricheskikh stantsiy i setey (ORGRES), trust, Moscow.
(Steam power plants--Equipment and supplies)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

RATNER, A.V., kand. tekhn. nauk; KROPP, L.I., inzh.; KHRAMOV, S.I., inzh.

Testing of superheater tubes from 12Kh1MF steel under long-term vibration loads. Elek. stat. 35 no.1:33-37 Ja '64. (MIRA 17:6)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

ACCESSION NR: AP4041174 S/0096/64/000/007/0060/0063

AUTHOR: Ratner, A. V. (Candidate of technical sciences); Berezina, T. G. (Engineer)

TITLE: Residual stresses in welded joints of austenitic steam pipelines

SOURCE: Teploenergetika, no. 7, 1964, 60-63

TOPIC TAGS: stainless steel steam pipeline, 1Kh18N12T steel steam pipeline, AISI321 steel, steam pipeline weld, weld induced pipeline deformation, steam pipeline cracking

ABSTRACT: The magnitude and distribution of residual deformation along the axis of welded pipeline with 128-mm diameter and 28-mm wall thickness made from austenitic stainless 1Kh18N12T [AISI321] steel have been investigated. Welded joints were cut out from an operating steam pipeline immediately after welding and after 12,000 hrs of operation; the latter joint was cut out because of the appearance of a circumferential crack, 80 mm long. The tests showed that, beyond the weld-affected zone, all fresh-welded joints

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ACCESSION NR: AP4041174

have a definite level of elastic deformations ($\varepsilon = 1.5—2.5 \cdot 10^{-4}$). The deformations correspond to conditional stresses of 30—50 Mn/m^2 in the linearly stressed condition and are completely removed during subsequent operation. The control-type welded joints have a deformation level significantly lower than that of welds made directly on the steam pipeline. A sharp peak of tensile deformations (ε reaching $14.0 \cdot 10^{-4}$, or a conditional stress of up to 280 Mn/m^2) was detected in the weld-affected zone at a distance of 2—6 mm from the fusion line. Compression deformations of the same magnitude predominate in the immediate vicinity of the fusion line. Operation of the steam pipeline at 565C for 12,000 hr reduced the peak stresses to 190 Mn/m^2, although they were completely eliminated at a distance of 10 mm from the weld. Hence, these residual stresses, combined with those originating in the steam pipeline during operation, can play a substantial part in local failures of austenitic steam pipelines. Orig. art. has: 4 figures, 2 tables, and 3 formulas.

ASSOCIATION: VTI; Chelyabenergo

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APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

ACCESSION NR: AP4041174

SUBMITTED: 00 ATD PRESS: 3066 ENCL: 00

SUB CODE: MM,IE NO REF SOV: 005 OTHER: 001

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APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

RATNER, A.Yu.

Case of impressio basillaris. Kaz. med. zhur. no.4:76-78 Jl-Ag '61. (MIRA 15:2)

1. Klinika nervnykh bolezney (zav. - prof. I.I.Rusetskiy) Kazanskogo gosudarstvennogo institut dlya usovershenstvovaniya vrachey imeni V.I.Lenina.

(SKULL ABNORMITIES AND DEFORMITIES)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

RATNER, A.Yu. (Kazan')

Neurological characteristics of anomalies of the craniocervical region. Vop. neirokhir. 26 no.6:41-45 N-D'62 (MIRA 17:3)

1. Kafedra nervnykh bolezney Gosudarstvennogo instituta usovershenstvovaniya vrachey, Kazan'.

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

RATNER, A.Yu.; SMIRNOV, A.N. (Kazan')

Comatose form of acute hemorrhagic meningo-encephalitis with a favorable result. Kaz.med. zhur. no.3:91-92 My-Je '63. (MIRA 16:9)

(MENINGES—DISEASES) (ENCEPHALITIS)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

RATNER, A.Yu., assistent

Clinical aspects, diagnosis and therapy of "cervical migraine." Kaz.med.zhur. no.4:35-38 Jl-Ag '62. (MIRA 15:8)

1. Kafedra nervnykh bolezney (zav. - prof. I.I.Rusetskiy) i kafedra rentgenologii No.1 (zav. - prof. M.Kh.Fayzullin) Kazanskogo gosudarstvennogo instituta dlya usovershenstvovaniya vrachey imeni Lenina.

(MIGRAINE)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

BATNER, A.Yu.

X-ray diagnosis of cervical migraine. Vest. rent. i rad. 38 no.6:24-27 N-D '63. (MIRA 17:6)

1. Iz kafedry nervnykh bolezney (zav.- zasluzhennyy deyatel' nauki RSFSR i Tatarskoy Avtonomnoy Sovetskoy Sotsialisticheskoy Respubliki prof. I.I. Rusetskiy) i pervoy kafedry rentgenologii (zav.- prof. M.Kh. Fayzullin) Kazanskogo instituta usovershenstvovaniya vrachey.

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

RATNER, A. Yu. (Kazan')

Characteristics of headache in cervical migraine. Klin. med. 41 no.9:99-104 S'63 (MIRA 17:3)

1. Iz kafedry nervnykh bolezney (zav. - zasluzhennyy deyatel' nauki RSFSR prof. I.I. Rusetskiy) Kazanskogo instituta usovershenstvovaniya vrachey (rektor - dotsent Kh.Z. Akhunzyanov).

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

RATNER, A.Yu.

Thrombosis of the cavernous sinus following injury to the face with fracture of the bones of the nose and orbit. Kaz. med. zhur. no.6: 65-66 N-D '60. (MIRA 13:12)

1. Medsanchast' No 1 g. Zelenodol'ska (glavvrach - N.S. Zelikova) Tatarskoy ASSR.

(CAVERNOUS SINUS—DISEASES) (THROMBOSIS)
(NOSE—FRACTURE)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

SMIRNOV, A.N.; RATNER, A.Yu.

Iosif Iosifovich Rusetskii [d. 1964]; an obituary. Zhur. nevr. i psikh. 65 no.4:638-639 '65. (MIRA 18:5)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

RATNER, A.Ya.; SMIRNOV, A.K.

Thrombosis of the vessels of the base of the brain in diabetes mellitus. Kaz. med. zhur. no.6:55-58 N-D '63. (MIRA 17:10)

1. Kafedra nervnykh bolezney (zav. - prof. I.I. Rusetskiy) Kazanskogo gosudarstvennogo instituta dlya usovershenstvovaniya vrachey imeni Lenina.

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

RATNER, Aleksandr Yur'yevich; BYK, T.N., red.

[Cervical migraine] Sheinaia migren'. Kazan', Izd-vo Kazanskogo univ., 1965. 197 p. (MIRA 18:10)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

RATNER, A.Yu.; SHCHENOV, A.N.

Neurological characteristics of cervical diskogenic myelopathies. Vop. neirokhir. no.5:50-51 '64. (MIRA 18:10)

1. Kafedra nervnykh bolezney (zav. -- prof. I.I.Rusetskiy) Kazanskogo instituta usovershenstvovaniya vrachey.

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

[illegible], [illegible].

Clinical characteristics of cervical migraine. Sov. med. 28 no.8:60-63 Ag '65. (MIRA 18:9)

1. Kafedra nervnykh bolezney (zav. - prof. I.I.Rusetskiy) Kazanskogo instituta usovershenstvovaniya vrachey imeni Lenina.

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

RATNER, A.Yu.; TABEYEVA, D.M.

Diagnosis of Strümpell's spastic paraplegia. Zhur. nevr. i psikh. 65 no.8:1164-1168 '65. (MIRA 18:8)

1. Kafedra nervnykh bolezney (zaveduyushchiy - prof. I.I. Rusetskiy [deceased]) Kazanskogo instituta usovershenstvovaniya vrachey.

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

RATNER, A.Yu.

Importance of the radicular syndrome in cervical migraine. Zhur. nevr. i psikh. 63 no.12:1802-1806 '63. (MIRA 18:1)

1. Kafedra nervnykh bolezney (zav. - prof. I.I.Rusetskiy) Kazanskogo instituta usovershenstvovaniya vracheY.

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

RATNER, B.

709
RAL

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6961
INVESTIGATION OF PHOTOPROTONS FROM COPPER AND NICKEL. E. Leikin, R. Osokina, and B. Ratner (Academy of Sciences of the U.S.S.R., Moscow). Nuovo cimento (10) 3, Suppl. No. 1, 105-18(1956). (In English)

Photonuclear reactions were studied to establish the mechanism of γ-ray interaction with nuclei and to provide a check for the validity of proposed nuclear models. The energy and angular distribution of photoprotons from neighboring Cu and Ni nuclei at maximum values of bremsstrahlung energy were observed in detail. (F.S.)

Nuc Sci

Phys

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

MAL'KOV, V.G., inzh.; PRILEPSKIY, V.I., inzh.; DUBROV, V.S., inzh. V raboto prinimali uschastiye: KHIL'KO, M.M., inzh.; MERSHCHIY, N.P., inzh.; CHETVERIKOV, V.Ya., inzh.; ZUROV, I.N., inzh.; RATHER, B.R., inzh.; BUBYCHEV, G.D., inzh.; ALFEROV, K.S., inzh.; PAVLENKO, N.M., inzh.; FINKEL'SHTEYN, M.M., inzh.; PLUZHKO, N.F., inzh.; SAMSONOV, T.F., inzh.; BABENKO, N.N., inzh.; LAD'YANOV, N.I., inzh.; TUPIL'KO, V.S., inzh.

Deoxidizing and alloying 25G2C steel with ferromanganese and ferrosilicon in 200-ton ladles. Stal' 20 no.9:803-806 S '60.(MIRA 13:9)
(Steel, Structural--Metallurgy)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

RATNER, Boris Ruvimovich; POZDNYAKOVA, G.L., red.izd-va; ATTOPOVICH, M.K., tekhn. red.[deceased]

[Economical steel for helical rib shapes]Ekonomichnaia stal' dlia periodicheskikh profilei. Moskva, Metallurgizdat, 1963. 124 p. (MIRA 16:3)
(Steel, Structural) (Concrete reinforcement)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

RATNER, B.S.

5 00 1-RML

4942

STUDIES OF (γ,p) REACTIONS IN THE ENERGY RANGE UP TO 30 MEV. E. M. Laikin, R. M. Osokina, and B. S. Ratner. Izvest. Akad. Nauk S.S.S.R. Ser. Fiz. 19, 607 (1955) Sept.-Oct. (In Russian)

3

Detailed investigations of the energy and angular distribution of photoprotons in a series of elements were made with the 30-Mev synchrotron. The photoproton emission from copper was studied at γ quantum maximum energies of 19, 24, 28, and 30.5 Mev, and the emission from nickel at 21.5, 25.5, 28.0 Mev. The preliminary measurements were obtained on aluminum and lead. With the transitions of $E\gamma_m$ = 24.0 Mev to $E\gamma_m$ = 28.0 and 30.5 Mev a sharp change was observed in the angular distribution, in the shape of the energy spectra, and the emission of the fast photoprotons from copper. (R.V.J.)

RML

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

RATNER, B. S.

USSR/Nuclear Physics - Photofission, lagging neutrons FD-2961

Card 1/1 Pub. 146 - 2/28

Author : Lazareva, L. Ye.; Ratner, B. S.; Shtranikh, I. V.

Title : Delaying neutrons accompanying the photofission of uranium and thorium

Periodical : Zhur. eksp. i teor. fiz., 29, September 1955, 274-279

Abstract : The authors obtain curves of decay and yield of delaying neutron radiation that accompanies the photofission of uranium and thorium. Relative to all the neutrons emitted during photofission of uranium and thorium the lagging neutrons amount to 0.41±0.02% and 0.18±0.01% respectively. Three references.

Institution : Physical Institute im. P. N. Lebedev, Academy of Sciences USSR

Submitted : May 31, 1955

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

RATNER, B.S.

USSR/Physics - (γ p) reaction

Card 1/1 Pub. 22 - 14/59

Authors : Leykin, Ye. M.; Osokina, R. M.; and Ratner, B. S.

Title : Study of the (γ p) reaction on copper

Periodical : Dok. AN SSSR 102/2, 245-248, May 11, 1955

Abstract : An experimental study of the (γ p) reaction on copper is described. A synchrotrone was used as a source of γ-quanta of 30.5 Mev. of energy. A foil of 18,4 mg/cm thick and consisting of natural copper isotopes was exposed to a beam of γ -quanta collimated by a lead collimator of 20 cm thick. Results are presented and explained. Seven references: 1 USSR and 6 USA, (1947-1955). Diagrams; graphs; table.

Institution : Acad. of Sc., USSR, Physical Institute imeni P. N. Lebedev

Presented by : Academician V. N. Kondrat'ev, January 1, 1955

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

RATNER, B.S.

Delayed neutrons accompanying the photofission of uranium and thorium. L. E. Lazareva, B. S. Ratner, and I. V. Shtranikh. *Zhur. Eksptl. i Teoret.* [illegible], 274-9 (1955).—Data and curves for the fission and delayed neutron-radiation yield accompanying the photofission of U, Th, and Pb are shown. The delayed neutrons constitute, resp., 0.41 ± 0.02 and 0.18 ± 0.01% of the total yield of neutrons.

Franz H. Rathmann

NU

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

RATNER B.S.

USSR/ Physics

Card 1/1 Pub. 22 - 19/62

Authors : Leykin, Ye. M.; Osokina, R. M.; and Ratner, B. S.

Title : Study of the reaction (p), of nickel

Periodical : Dok. AN SSSR 102/3, 493 - 494, May 21, 1955

Abstract : According to a method described in a previous report, the study of the energetic and angular distribution of photo-protons emmitted from a nickel foil is presented. Three references: 1 USSR and 2 USA (1951-1955). Diagrams.

Institution : The Acad. of Sc., USSR, P. N. Lebedev Physical Institute

Presented by: Academician V. N. Kondrat'ev, February 1, 1955

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

RATNER, B. S.

Delayed neutrons accompanying the photofission of uranium and thorium. L. B. Lazareva, B. S. Ratner, and I. V. Shtranikh. *Soviet Phys., JETP* 2, 301-6(1956)(Engl. translation).—See *C.A.* 50, 2313*b*. B. M. R.

3

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

RATNER, B. S.

"Stabilization of Electron Energies in the 30 Mev Cyclotron," by M. V. Karpov, Ye. P. Ovchinnikov, and B. S. Ratner, Atomnaya Energiya, Vol 2, No 2, Feb 57, pp 140-145

This work describes an instrument intended to stabilize maximum energy in the Bremsstrahlung spectrum. The system was designed for the 30 Mev synchrotron of the Physics Institute imeni P. N. Lebedev,

A circuit diagram of the stabilizer is given.

Tests of the effectiveness of the system were made by measuring the yield of photonuclear reactions. These showed that the maximum energy remained constant within the limits ± 30 kev. (U)

Sum. 1345

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

GO TSI-DI [Kuo Ch'i-ti]; RATNER, B.S.

Studying the (γ, p)-reaction in the Sn^{120} isotope. Zhur. eksp. i teor. fiz. 39 no. 6:1578-1584 D '60. (MIRA 14:1)

1. Fizicheskiy institut im. P.N. Lebedeva Akademii nauk SSSR.
(Nuclear reactions) (Tin--Isotopes)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

RATNER, B.S.

PA - 2103

AUTHOR: OSOKINA, P.M., RATNER, B.S.

TITLE: Investigation of the (γ,p) reaction on Zinc. (Russian).

PERIODICAL: Zhurnal Eksperim. i Teoret. Fiziki, 1957, Vol 32, Nr 1, pp 20-26 (U.S.S.R.)

Received: 3 / 1957 Reviewed: 4 / 1957

ABSTRACT: The present work is a continuation of the investigation of the photoprotons which are emitted by various nuclei under the effect of the bremsstrahlung of a synchrotron with a maximum energy of γ-rays up to 30 MeV.

The measuring method is similar to that described by LEJKIN, E.M. et al (Doklady Akademii Nauk SSSR, 1955, Vol 102, 245). The protons were recorded in photoemulsions NIKFI JA-2 of 400μ thickness. On the occasion of an inspection of plates by means of binocular microscopes the traces of the protons with energies of $\varepsilon_p \geqslant 3{,}0$ MeV were selected, which begin on the surface of the emulsion and develop in the proper direction. The complete energy spectrum was measured only for the energies of E_{fm} = "0,8 and 20,6 MeV.

In the remainder of the cases only the energy of the fast protons with $\varepsilon_p \geqslant 9$ MeV was determined. Proton energy was determined from the curve range-energy. The dose was determined by means of an integrating monitor-ionization chamber.

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

PA - 2103

Investigation of the (γ,p) reaction on Zinc.

Measuring results: The energy spectra of the photoprotons with the energy of $\varepsilon_p \geqslant 3$ MeV originating from the Zn, which were obtained at the energies of $E_{\gamma m} = 20,8$ and $28,6$ MeV and were integrated over the angles Θ are shown in form of a diagram. Further diagrams illustrate the energy distributions of photoprotons with $\varepsilon_p \geqslant 9$ MeV measured at different energy distributions, the dependence of the yield of protons with $\varepsilon_p \geqslant 3$ MeV on the maximum energy of the γ-rays and the analogous dependence for the photoprotons with $\varepsilon_p \geqslant 9$ MeV, as well as the production cross section of the photoprotons with $\varepsilon_p \geqslant 9$ MeV. The evaluation of the integral emission cross sections of the phoprotons with $\varepsilon_p \geqslant 3$ MeV from Zn furnishes the value 0,46 barn. The ratio of the yields of the photoprotons from Zn, Cu and Ni at $E_{\gamma m} =$ 25,5 MeV amounts to 1,5 : 1,0 : 1,7.

On the occasion of the discussion of results the results obtained for fast protons were dealt with separately. These re-

Card 2/3

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

PA - 2103

Investigation of the (γp) reaction on Zinc.

sults indicate that the contribution made by the direct photo-effect for nuclei with Z ~ 30 amounts to about 20 - 40 % in the case of the γ-ray energies investigated here. In this connection the γ-quanta probably enter into interaction with the protons located on the individual shells of the nucleus. The cross section of such an interaction obviously has the character of resonance. Unfortunately the data obtained for other elements are not sufficient in order to be able to analyze them in the light of the ideas discussed here.

ASSOCIATION: Physical Institute "P.N.Lebedev" of the Academy of Science of the U.S.S.R.

PRESENTED BY:

SUBMITTED:

AVAILABLE: Library of Congress

Card 3/3

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

PHASE I BOOK EXPLOITATION SOV/5087

Ratner, Boris Samuilovich

Uskoriteli zaryazhennykh chastits (Accelerators of Charged Particles) Moscow, Fizmatgiz, 1960. 112 p. 12,000 copies printed. (Series: Populyarnaya fizicheskaya biblioteka)

Ed.: L. F. Veres; Tech. Ed.: S. S. Gavrilov.

PURPOSE: This booklet is intended for the general reader.

COVERAGE: The booklet describes in popular form the developmental history and the recent advances of accelerating techniques and explains the basic principles of accelerator operation. Necessary information on the structure of atoms, atomic nuclei, and the basic types of nuclear reactions is given. No personalities are mentioned. There are 9 references, all Soviet (including 4 translations).

Card ~~1/3~~

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

L 27742-66 EWT(m)/EWA(h)

ACC NR: AP6018706 SOURCE CODE: UR/0386/66/003/011/0452/0455

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37
B

AUTHOR: Ivanchenko, V. G.; Ratner, B. S.

ORG: Physics Institute im. P. N. Lebedev, Academy of Sciences SSSR (Fizicheskiy institut Akademii nauk SSSR)

TITLE: Shell effects in the cross section of the reaction $Zn^{67}(\gamma p)$ 19

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki. Pis'ma v redaktsiyu. Prilozheniye, v. 3, no. 11, 1966, 452-455

TOPIC TAGS: zinc, gamma interaction, scattering cross section, photon scattering, nuclear shell model, photoeffect

ABSTRACT: To obtain more accurate data on the connection between the photoproton cross section and the shell structure of the nucleus, the authors have investigated the nucleus Zn^{67}, which has two protons in the state $2p_{3/2}$ in excess of the filled $1f_{7/2}$ shell, for which it can be assumed that the yield of the reaction $Zn^{67}(\gamma p)$ is due essentially to the direct photoeffect. This yield was measured as a function of the maximum γ-quantum energy of the Physics Institute 30-Mev synchrotron, by recording the β activity of the final Cu^{66} nucleus. Data on the contribution of the two p-shell protons to the cross section of the $Zn^{67}(\gamma p)$ reaction were obtained from an analysis of the obtained cross section curve and from published data on the $Ni^{62}(\gamma p)$ reaction. It is found that the contribution from the protons in excess of the shell has a maximum at $E_\gamma = 17.0$ Mev. The distance between the p and f levels is

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ACC NR: AP6018706

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found to be 5 Mev. The maximum at 17 Mev corresponds to a considerable proton anisotropy, but another maximum, at 22.0 Mev, deduced from the comparison with the data on Ni^{62}, corresponds to practically isotropic proton distribution. It is concluded that the use of low-energy reactions such as (p,2p) and (e,e'p) can yield data on the proton binding energies in the internal shells of nuclei provided the bombardment nuclei are appropriately chosen. The authors thank V. G. Volkov, N. I. Izotov, and Yu. N. Yefimov for help with the work. Orig. art. has: 2 figures.

SUB CODE: 20/ SUBM DATE: 22Mar66/ ORIG REF: 004/ OTH REF: 004

Card 2/2

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

ACCESSION NR: AP4031131 S/0056/64/046/004/1157/1162

AUTHOR: Ratner, B. S.

TITLE: Cross section for photoproton emission from copper

SOURCE: Zh. eksper. i teor. fiz., v. 46, no. 4, 1964, 1157-1162

TOPIC TAGS: copper, photoproton emission, photoproton emission cross section, preferred transition, photoproton yield

ABSTRACT: To check on the existence of preferred transitions due to nucleons in excess of the closed shell, the authors investigated the photoproton yield from copper, which has one proton on top of the nickel magic nucleus (Z = 28). The measurements were made with the synchrotron of the Fizicheskiy institut im. P. N. Lebedeva (Physics Institute, Academy of Sciences). The protons were registered with CsI(Tl) crystals from threshold up to E_γ = 27 MeV. The cross section curve has a complicated form with three peaks at E_γ = 12.5 ±

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

ACCESSION NR: AP4031131

± 0.5, 16.5 ± 0.5, and 20.5 ± 0.5 MeV. Comparison with the similar curve for nickel and with the level scheme leads to the conclusion that the first two maxima are due to dipole absorption of quanta by one proton in the $2p_{3/2}$ state (the third corresponds to the transition from the $1f_{7/2}$ shell). The cross section obtained for copper in this investigation differs appreciably in form from the previously measured photoproton cross sections for other nuclei. "In conclusion I take the opportunity to thank V. P. Lyubimov and N. I. Izotov for help with the work, and also the cyclotron crew. I am indebted to V. V. Balashov, V. G. Neudachin, and B. A. Tulupov for useful discussion of the results." Orig. art. has: 4 figures and 1 table.

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva AN SSSR (Physics Institute, AN SSSR)

SUBMITTED: 29Apr63 DATE ACQ: 07May64 ENCL: 02

SUB CODE: PH NO REF SOV: 006 OTHER: 011

Card 2/4

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

VEKSLER, V.I.; PISAREV, V.Ye.; MOROZ, Ye.M.; RATNER, B.S.

The 30 Mev. synchrotron of the Physical Institute. Trudy Fiz. Inst. 19:98-150 '63. (MIRA 16:8)

(Synchrotron)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

KARPOV, M.V.; OVCHINNIKOV, Ye.P.; RATNER, B.S.

Stabilization of the electron energy in a 30 Mev. synchrotron. (MIRA 16:8)
Trudy Fiz. Inst. 19:158-166 '63.

(Synchrotron)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

GO TSI-DI [Kuo Ch'i-ti]; RATNER, B.S.; SERGEYEV, B.V.

Investigating the (γ ,n) reaction on sn^{112} and sn^{124} isotopes. Zhur. eksp. i teor. fiz. 40 no.1:85-87 Ja '61. (MIRA 14:6)

1. Fizicheskiy institut imeni P.N. Lebedeva AN SSSR.
(Nuclear reaction) (Tin--Isotopes)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

GO TSI-DI [Kuo Ch'i-ti]; GOL'DANSKIY, V.I., doktor fiziko-matem. nauk, nauchnyy rukovoditel'; RATNER, B.S., kandidat fiziko-matem. nauk, nauchnyy rukovoditel'.

[Investigation of the cross sections of (γ p) reactions on medium nuclei; author's abstract of his dissertation for the degree of candidate of the physical and mathematical sciences] Issledovanie sechenii (γ p) reaktsii na srednikh iadrakh; avtoreferat dissertatsii, predstavlennoi na soiskanie uchenoi stepeni kandidata fiziko-matematicheskikh nauk. Nauchnye rukovoditeli - V.I.Gol'danskii. B.S.Ratner. Moskva, Akad. nauk SSSR, Fizicheskii in-t im. P.N.Lebedeva, 1960. 7 p. (MIRA 14:5)

(Nuclear reactions)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

ACCESSION NR: AP4031178 S/0056/64/046/004/1480/1481

AUTHOR: Ratner, B. S.

TITLE: Yield of photoprotons from calcium

SOURCE: Zh. eksper. i teor. fiz., v. 46, no. 4, 1964,1480-1481

TOPIC TAGS: calcium, photoproton, giant resonance, emission spectrum, integral cross section, gamma proton reaction

ABSTRACT: The yield curve of the reaction Ca^{40} (γ, p + γ, pn) was measured up to 27 MeV γ-ray energy by registration of protons in CsI(Tl). This is a refinement of an earlier measurement by the author (ZhETF v. 46, 1157, 1964). More exact measurements in the region of giant resonance indicate the existence of two peaks at γ-ray energies 19.0 and 19.9 MeV. The cross section for the emission of photoprotons was calculated by the Penfold and Leiss method for the yield curve measured every 1 MeV. The integrated cross section for the emission of photoprotons with energy $\geq$ 5 MeV is 124 $\pm$ 10 MeV-mb, and allowance for the unrecorded part of the photoprotons spectrum makes it equal to 280 MeV-mb. The experimental positions of the peaks in the photoproton cross section curve are close to those obtained by

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ACCESSION NR: AP4031178

others, and these peaks exhaust the entire dipole sum, in accordance with shell-model calculations. Orig. art. has: 1 figure

ASSOCIATION: None

SUBMITTED: 30Jul63 DATE ACQ: 07May64 ENCL: 01

SUB CODE: NP NR REF SOV: 001 OTHER: 003

Card 2/3

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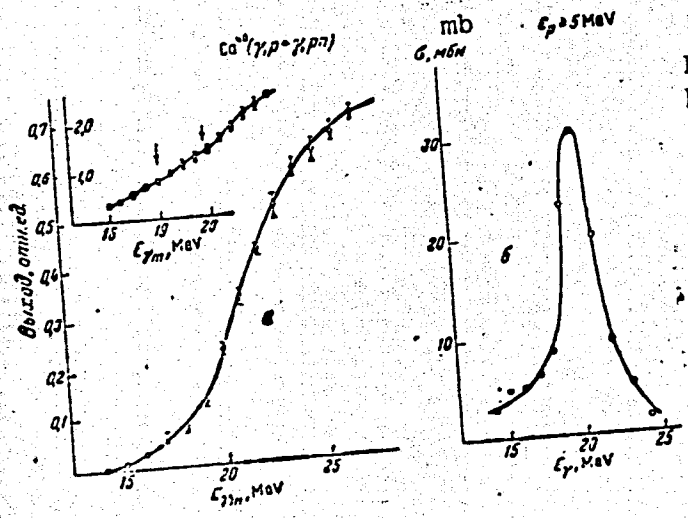
"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

ENCLOSURE: 01

ACCESSION NR: AP4031178



Dependence of the yield of photoprotons with energy $\varepsilon \geq 5$ MeV from Ca^{40} on $E_{\gamma m}$. Top - the same dependence measured every 0.25 MeV in the region $E_{\gamma m}$ = 18 - 21.5 MeV. The arrows indicate the positions of the bends in the curve. Mean square errors are indicated.

b - cross section for the emission of photoprotons with energy $\varepsilon_p \geq 5$ MeV from Ca^{40}.

Ordinate - yield, rel. units

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

S/056/60/039/006/017/063
B006/B056

AUTHORS: Go Tsi-di, Ratner, B. S.

TITLE: Investigation of the (γ,p) Reaction on the Isotope Sn^{120}

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1960, Vol. 39, No. 6(12), pp. 1578 - 1584

TEXT: The interaction of γ-quanta with nuclei was studied and data were obtained for the nuclear structure by examining the photonuclear reaction (γ,p); Sn^{120} was chosen, because for this nucleus the difference of the binding energies of proton and neutron is positive (≈2.16 Mev), so that the probability of a proton emission by compound nuclei is low. The protons observed may thus be ascribed to a direct (γ,p) reaction. The investigations were carried out on the synchrotron of the FIAN at $E_{\gamma\,max}$ = 30 Mev on 2-g specimens having the following composition:

Sn^{124}	Sn^{122}	Sn^{120}	Sn^{119}	Sn^{118}	$Sn^{112-117}$
<0.1	0.1	99.1	0.6	0.1	<0.07 %

The specimens measured 40 x 30 x 0.2 mm^3. The $Cu^{63}(\gamma,n)Cu^{62}$ reactions on

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Investigation of the (γ,p) Reaction on the Isotope Sn^{120}

S/056/60/039/006/017/063
B006/B056

copper targets of the same shape served as main monitors, and the additional monitor was an integrating ionization chamber with a lead top (2mm), serving to record the intensity deviations of the beam. During measurement of the yield of the reaction $Sn^{120}(\gamma,p)In^{119}$ (T = 17.5 min), a 380 mg/cm^2 thick aluminum filter was used to eliminate the low activity due to the reaction $Sn^{124}(\gamma,n)Sn^{123}$ (T = 39.5 min, E_β = 1.3 Mev). The energy of the γ-rays accompanying the β-decay of In^{119} was measured by two scintillation counters (NaI(Tl)) connected in parallel with ФЭУ-29 (FEU-29) photomultipliers. The pulses coming from the counters were conveyed to the single-channel analyzer, the scaler, and the time analyzer. For electron absorption a 2.5-mm thick aluminum filter was placed between specimen and crystals. Besides the well-known activities of In^{119} and In^{118} produced in (γ,p)- and (γ,np) reactions, of (17.5±0.2)min and 4.5 min, respectively, also an activity with (2.1±0.2)min half-life was discovered. For this activity, the energy of the electrons of the β-decay is E_β = 1.8 Mev (for the one with 17.5 min it is E_β = 2.6 Mev). The yield

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Investigation of the (γ,p) Reaction on the Isotope Sn^{120}

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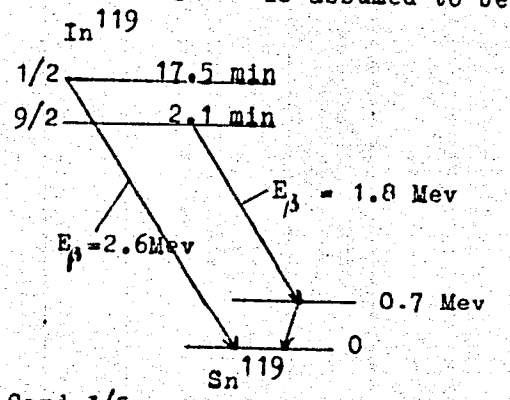
ratio of these two activities hardly changes at all between $E_{\gamma max}$ = 20 ÷ 28 Mev, at $E_{\gamma max}$ <20 Mev it increases rapidly. From the results obtained the conclusion is drawn that the 2.1-min activity is the ground state of In^{119}, produced in the reaction $Sn^{120}(\gamma,p)In^{119}$. The decay scheme of In^{119} is assumed to be as follows:



The cross section of the reaction (γ,p) in the maximum at $E_{\gamma max}$=(20.8±0.5)Mev, amounts to (6.5±0.6)mb. The integral cross sections are found at (28±2) and (5.0±1)mb·Mev for the (γ,p) and the (γ,pn) reaction, respectively. Further numerical results are tabulated. The authors thank O. V. Bogdankevich, L. Ye. Lazareva, and B. A. Tulupov for discussions, and V. S. Zolotarev for producing the specimens. V.N.Levkovskiy is mentioned. There are 4 figures,

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Investigation of the (γ,p) Reaction on the Isotope Sn^{120}

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B006/B056

2 tables, and 20 references: 5 Soviet, 2 Italian, 6 US, 1 Danish, 1 German, 1 Canadian, 1 Swiss, 2 British, and 2 Dutch.

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

SUBMITTED: July 12, 1960

Text to Table 1: Data on the (γ,p)-reaction cross sections; 1) nucleus, 2) half-width of the resonance curve; the cross sections are given in mb.

Text to Table 2: Data on the proton dipole transitions in the tin-nucleus; 1) transition, 2) transition energy in relative units; 3) strength of transition, 4) energy of transition, 5) energy of the emitted proton, 6) transmissivity, 7) probability for proton emission.

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Table 1

Ядро 1	E_{max}, MeV	σ_{max}, мбн	Г, MeV 2	$\int \sigma dE$, мбн·MeV
Sn_{50}^{120}	20,8 ± 0,5	6,5 ± 0,6	3,5 ± 0,5	28 ± 3
Cd_{48}^{116}	21,0 ± 0,5	12,0 ± 1	5,2 ± 0,5	67 ± 7
Cd_{48}^{114}	20,5 ± 0,5	8,3 ± 0,8	4,0 ± 0,5	36 ± 4
Cd_{48}^{112}	21,0 ± 0,5	6,65 ± 0,7	4,4 ± 0,5	31 ± 3
Cd_{48}^{110}	21,2 ± 0,5	3,3 ± 0,3	4,4 ± 0,5	16 ± 2
Mo_{50}^{100} [9]	22,0	15,0	5,0	100 ± 20

1 Переход	2 Энергия перехода, относит. ед. [10]	[12]	[14]	3 Сила перехода	4 Энергия перехода, MeV*	5 Энергия возбужденного протона, MeV	6 Проницаемость	7 Вероятность испускания протона
1	2	3	4	5	6	7	8	9
$1g_{9/2} \to 1h_{11/2}$	1,0	1,0	1,0	1,45	15,3	4,0	$0,1 \cdot 10^{-4}$	$0,15 \cdot 10^{-6}$
$1f_{5/2} \to 1g_{7/2}$	1,05	1,3	1,1	0,84	16,0	0,7	0	0
$1f_{5/2} \to 2d_{3/2}$	1,6	1,5	1,4	0,06	24,2	8,9	0,85	0,051
$2p_{1/2} \to 2d_{3/2}$	1,4	1,1	1,3	0,19	20,8	9,0	0,85	0,16
$2p_{3/2} \to 2d_{3/2}$	0,85	1,0	1,2	0,33	13,0	—	—	0
$2p_{3/2} \to 3s_{1/2}$	1,6	1,3	1,5	0,08	24,6	10,1	1,0	0,08

Tab. 2

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RATNER, Boris Samuilovich; VKRES, L.F., red.; GAVRILOV, S.S., tekhn.red.

[Charged particle accelerators] Uskoriteli zariazhennykh chastits. Moskva, Gos.izd-vo fiziko-matem.lit-ry. 1960. 112 p. (MIRA 14:1)

(Particle accelerators)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

LIN'KOVA, N.V.; OSOKINA, R.M.; RATNER, B.S.; AMIROV, R.Sh., sotrudnik; AKINDINOV, V.V., sotrudnik

Photoprotons from Cu^{65}. Zhur.eksp.i teor.fiz. 38 no.3: 780-789 Mr '60. (MIRA 13:7)

1. Fizicheskiy institut im. P.N.Lebedeva Akademii nauk SSSR.
2. Saratovskiy gosudarstvennyy universitet (for Amirov, Akindinov).

(Protons) (Copper--Isotopes)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

21(7)

AUTHORS: Kuo Chi-ti, Ratner, B. S. SOV/20-125-4-19/74

TITLE: An Investigation of the Yield of the Reaction (γp) on Different Isotopes of Cadmium (Issledovaniye vykhoda reaktsii (γp) na razlichnykh izotopakh kadmiya)

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 125, Nr 4, pp 761-764 (USSR)

ABSTRACT: At present the mechanism of the interaction between γ-quanta and nuclei within the energy range of 10 - 30 Mev can by no means be considered to be clear. The experimental data (gigantic resonance in the cross section of photoneutron reactions and their dependence on A, abnormally large yield of protons, particular features in energy distribution and in the angular distribution of emitted particles etc) are explained by two different conceptions: Model of dipole oscillations and shell model. Measurements were carried out on the 30 Mev synchrotron of the FIAN (Physics Institute of the Academy of Sciences). The cadmium samples with a degree of more than 99.95 % were irradiated in a γ-beam at a distance of 20 cm from the target of the synchrotron for 10, 30 or 60 minutes. At the same time also copper samples were irradiated

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An Investigation of the Yield of the Reaction (γp) on Different Isotopes of Cadmium SOV/20-125-4-19/74

under the same geometric conditions, in which case the yield of the reaction Cd(γp) was referred to the yield of the reaction $Cu^{63}(\gamma n)Cu^{62}$. The measuring method is discussed in detail. The ratio between the yield of the reaction Cd(γp) of the cadmium isotope Cd^{112}, Cd^{113}, Cd^{116} and the yield of the reaction $Cd^{114}(\gamma p)Ag^{113}$ is shown by a diagram as a function of energy. For the reaction $Cd^{116}(\gamma p)Ag^{115}$ only the data determined in the case of E_m are reliable. The following table contains the preliminary values of the cross sections determined for the yields from the aforementioned curves. The accuracy of these values is ± 20%, and the position of the maximum was determined with an accuracy of ± 0.5 Mev.

	$Cd^{112}(\gamma p)$	$Cd^{113}(\gamma p)$	$Cd^{114}(\gamma p)$	$Cd^{116}(\gamma p)$
The energy E_m which corresponds to the maximum in the cross section (in Mev)	21.0	20.0	21.0	> 20.5

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

An Investigation of the Yield of the Reaction (γp) on Different Isotopes of Cadmium SOV/20-125-4-19/74

Cross section in the case of E_m in millibarn	14.5	10.0	10.5	> 2.3

The experimentally observed large difference in the yield of the reaction (γp) on the isotopes of one and the same element is of interest, and this difference is particularly marked in the case of low values of $E_{\gamma m}$. With $E_{\gamma m}$ = 16 Mev the yields of the reaction (γp) for the isotopes Cd^{112}, Cd^{113}, Cd^{114} and Cd^{116} are in the ratios of 6 : 1.8 : 1.0 : 0.25. Thus, a smaller yield corresponds to heavier isotopes. First, several unsatisfactory explanations of the aforementioned great difference are pointed out. The binding energy of the proton above all explains the difference in penetrability of the barrier for protons. The observed rules are characteristic of the direct photoeffect and are apparently due to the variation of interaction between the protons on the single-particle levels and the γ-quanta in the case of an increase of the number of neutrons. Such a strong

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An Investigation of the Yield of the Reaction (γp) on Different Isotopes of Cadmium SOV/20-125-4-19/74

binding appears to be most peculiar. The results obtained by the present investigation are not, in principle, contradictory to the very numerous data obtained by other investigations, especially for cadmium (Ref 7). The position of the maximum in the cross section of the reaction (γp) on the isotopes Cd^{112}, Cd^{113}, and Cd^{114} differ considerably from the energy of the gigantic resonance, which amounts to 15.5 Mev in the case of cadmium. The authors thank B. A. Khotin for his assistance in the chemical separation of silver. There are 1 figure, 2 tables, and 13 references, 3 of which are Soviet.

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

PRESENTED: January 7, 1959, by V. I. Veksler, Academician

SUBMITTED: December 13, 1958

Card 4/4

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

RYTKIN, B. A.

"(γ,p) Reactions Yield for Cadmium Isotopes,"

Lebedev Physical Inst. Acad. Sci. USSR

report submitted at the A-U Conf. on Nuclear Reactions in Medium and Low Energy Physics, Moscow, 19-27 Nov 57.

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

RATNER, B. S.

AKINDINOV, V. V., AMIROV, R. Sh, OSOKINA, R. M. and RATNER, B. S.

"Investigation of the (γ,p) Reaction on the Intermediate Weight Nuclei."

Lebedev Physical Inst. USSR Acad. Sci and Saratov State University

paper submitted at the A-U Conf. on Nuclear Reactions in Medium and Low Energy Physics, Moscow, 19-27 Nov 57.

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

RATNER, B.S.

5

19, 27

The (γ,b) reaction on zinc. R. M. Osokina and B. S. Ratner. *Zhur. Eksptl. i Teoret. Fiz.* 32, 20-6(1957); *Soviet Phys. JETP* 5, 1-7(1957); cf. Leikin, *et al.*, *C.A.* 50, 6963*d*.—This is a continuation of earlier studies of photoprotons emitted by nuclei (Zn) bombarded by γ-rays. The energy of the γ-rays varied from 19.8 to 30.7 m.e.v. The yield, angular distribution, and the energy distribution were detd. J. Rovtar Leach

4E2c

1-RML

1-JWM

fia RML

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

KATUSHEV, F.I., inzh.; RATNER, D.B.

Protective coating of parts with sodium nitrite. Vest.mash. 39 no.3:69-71 Mr '59. (MIRA 12:4)
(Protective coatings) (Sodium nitrite)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

SOV/122-59-3-22/42

AUTHORS: Katushev, F.I. (Engineer), and Ratner, D.B.

TITLE: Protection of Machined Components by a Solution of Sodium Nitrite (Konservatsiya detaley rastvorom nitrita natriya)

PERIODICAL: Vestnik Mashinostroyeniya, 1959, Nr 3, pp 69-71 (USSR)

ABSTRACT: The Gor'kiy Automobile Factory has evolved a process for protection of machined components from corrosion for periods of at least one year by using a 25 to 30% solution of sodium nitrite. The solution acts by deposition of sodium nitrite crystals onto the metal surface which attract moisture from the air; this moisture forms a passive film of solution which is renewed continuously by oxidation of the film. Thorough preliminary degreasing is essential: a wash first in a 1.5% caustic soda and 1% waterglass solution is followed by a second wash in 1 to 2% caustic soda, followed by a final wash in a 1 to 2% solution of trisodium phosphate. Time for each wash is $1\frac{1}{2}$ minutes at 80 to 90°C. Small quantities of these solutions remaining on the treated parts are said to cause no corrosive action. The parts are then dipped slowly

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Protection of Machined Components by a Solution of Sodium Nitrite

into a 30% solution of sodium nitrite which is at a temperature of 40 to 60°C, and held there for 2 to 3 minutes. To ensure safe protection for periods up to 2 or 3 years, the treated components should be wrapped in kraft paper which has been impregnated with a 10% solution of sodium nitrite. A semi-automatic line for treatment of steel or cast iron parts is illustrated diagrammatically. The treatment enables a considerable saving in the cost of the greases formerly used for protection and also enables expensive bitumenized paper to be replaced by the cheaper kraft paper. The film is rather weak and the parts require careful handling. The treatment cannot be used for non-ferrous metals. Extra protection can be given by dipping the treated parts in vaseline at 110 to 120°C. Before the treated components are put into service they should be washed in a

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SOV/122-59-3-22/42

Protection of Machined Components by a Solution of Sodium Nitrite

2% solution of sodium nitrite, dried, and then protected by machine oil.
There is 1 figure.

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

RATNER, E.

Chemical Abstracts
May 25, 1954
Foods

(4)

Colorimetric method for estimation of moisture in process cheese. B. Ozimov, I. Alyamovskii, and E. Ratner (Technol. Inst. Refrigeration Ind., Leningrad). *Molochnaya Prom.* 15, No. 1, 36-8(1954).—A description with diagrams of a specially designed photometer (ONB-1) for measuring the intensity of a monochromatic beam of light (yellow-green filter), which is reflected from the surface of a circular filter-paper (I) impregnated with $CoCl_2$ and in contact with melted process cheese. The method is based on anhyd. $CoCl_2$ changing its color from blue to pink upon contact with water. I is prepd. by soaking in a 15% soln. of $CoCl_2$ and allowing it to dry in an oven. I is kept in desiccator prior to use. Vladimir N. Krukovsky

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

RATNER, E. A., Docent

"Utilization of Special Types of Transportation in Industrial Enterprises"
Vest. AK. Nauk SSSR, No. 9, 1944.

FDD Report U-1610, 24 Jan. 1952.

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

RATNER, E.G.

Automatic feed of grease to roller and calender bearings. Khim. prom. no.8:481-482 D '55. (MLRA 9:5)

1. Okhtenskiy khimicheskiy kombinat.
(Lubrication and lubricants) (Pumping machinery)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

RATNER, E.S.

6809. Relation between the characteristics of the vision and quantal variations of light. E. S. Ratner. *Dokl. Akad. Nauk, S.S.S.R.*, 1953, 105, 90—93; *Referat. Zh. Biol.*, 1956, Abstr. No. 87814.—Using the results of H. R. Blackwell's work (*J. opt. Soc. Amer.*, 1946, 36, 624) concerning the dependence of the resolving power of the human eye on the brightness and the contrast of the body and of the background, the equation of Rose and Luizow: $\alpha^2 k^2 B$ = const. (α: angle threshold of discrimination, B: brightness; $k = \Delta^2/_B$ was modified). To the left part of this equation a quotient was added: $K + 2(1 + \frac{\alpha}{a})^2$, where α means the effective angular diameter of the circle of the spread for an eye at a given brightness B. The quotient was obtained by applications of the theory of quantal variations. (Russian) G. Fegler

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

RATNER, E.I.; BOSZORMENYI, Z.

Mutual interactions of amino acids in their uptake by isolated wheat roots. In English. Acta bot.Hung. 5 no.3/4:429-436 '59.

(MRAI 9:5)

1. The Timirjazev Plant Physiological Institute of the Soviet Academy of Sciences.

(Wheat) (Amino acids) (Roots (Botany))

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

RATNER, E.S.

EXCERPTA MEDICA Sec.2 Vol.9/9 Physiology,etc.Sept56

4179. RATNER E.S. *Relationship of characteristics of vision to quantum fluctuations of light (Russian text) DOKLADY AKAD.NAUK.SSSR 1955, 105/1(90-93) Graphs 2

Whereas the dependence of the resolving power of the human eye on brightness, contrast, duration of gaze and other factors has been extensively studied, no satisfactory quantitative theory of such dependence has yet been achieved. In this paper several equations expressing the visual effect as a function of the nature of the stimulus are studied. The theoretical considerations must be read in the original. It is concluded that the visual substances in the retina undergo processes of degradation. The absorption of light quanta appears to be of particular importance; an equation relating this to the perceptual effect is developed.

Von Skramlik - Berlin

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

RATNER, E.Ya.

Changed cooling system of the 1284 lathe. Stan.i instr. 34 no.5:40 My '63. (MIRA 16:5)

(Lathes—Cooling)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

ACC NR: AP6002897 SOURCE CODE: UR/0286/65/000/024/0054/0054

AUTHOR: Starosel'skiy, N. V.; Ratner, F. A.

ORG: none

TITLE: Method of regulating pressure in mains of turboblowers. Class 27, No. 177022

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 24, 1965, 54

TOPIC TAGS: pressure, pressure regulator, industrial blower, pipe, gas compressor, automatic pressure control, hydraulic device

ABSTRACT: 1. The method of regulating pressure in mains of turboblowers, equipped with pressure regulators, to keep constant pressure in the collecting main by successive throttling, is characterized by the fact that in order to expand the range of adjustment when a minimal load is attained by all the compressors and further throttling is impossible, the pressure is maintained by letting the gas in the blower system flow into the atmosphere with the aid of a pressure regulator. 2. The method, described in paragraph 1, is characterized by the fact that in order to ensure control by taking into account the change in the suction

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UDC: 621.515.5—531.8

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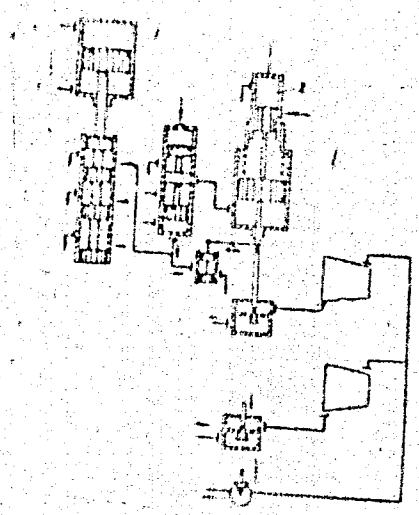
APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

ACC NR: AP6002897



1. pressure regulator
2. portable hydraulic checking device

conditions, the transition to throttling each successive compressor and to the transfer of the gas is effected with the aid of a portable hydraulic checking device.

SUB CODE: 13/ SUBM DATE: 18Jul64

Card2/2

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

L 04061-67 EWP(h)/EWT(d)/EWT(m)/T-2/EWP(w) EM/FDN

ACC NR: AP6027318 SOURCE CODE: UR/0114/66/000/005/0034/0036

45
B

AUTHOR: Ratner, F. Z. (Engineer)

ORG: none

26

TITLE: Optimum compression and expansion stages in a double shaft gas turbine unit with respect to efficiency and specific work

SOURCE: Energomashinostroyeniye, no. 5, 1966, 34-36

TOPIC TAGS: turbine stage , turbine design, gas turbine

ABSTRACT: The article is a continuation of previous work aimed at the development of a mathematical method for the determination of optimum parameters in the operation of double shaft gas turbine units. The mathematical development is based on the expansion into power series of the expressions for the efficiency and the specific work, and on the possibility of obtaining more simple equations by the use of rapidly converging iterative processes. Calculations are carried through for three different sets of initial conditions. Orig. art. has: 31 formulas.

SUB CODE: 13/ SUBM DATE: none/ ORIG REF: 003/ OTH REF: 001

kh

UDC: 621.438:66-971.001.5

Card 1/1

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0014443

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

S/096/63/000/002/006/013
E194/E455

AUTHOR: Ratner, F.Z., Engineer

TITLE: An experimental study of the flow-resistance of the air supply duct of a gas turbine rotor cooling system

PERIODICAL: Teploenergetika, no.2, 1963, 45-50

TEXT: Cooling air reaches a gas-turbine rotor through rapidly moving holes which may appreciably resist the flow and it may be necessary to assist the flow, for example by fitting ribs in front of or beyond the apertures. As the consequences are difficult to calculate, rig tests were undertaken to determine the air supply duct resistance experimentally. The rig represented the duct of a gas turbine type ГТ-25-700 (GT-25-700) to a scale of 1:1.38. Air passed through holes in the rotor and various arrangements of ribs near to inlet to and discharge from the holes were tried. There were three groups of tests: of blowing air through the system; of the pumping effect of variants of the rig; calibration of the air sealing glands. It was found that ribs near the outlets of the holes caused the rig to behave as an air pump and not as a resistance, the pressure rising from 9.6 to 9.8 atm when air at

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An experimental study ... S/096/63/000/002/006/013
E194/E455

170°C passed through the rig at the rate of 10.5 tons/hour. The head was mainly due to ribs near the outlet but the radial diffuser helped. Ribs near the inlet are harmful if air is delivered peripherally. It is better, however, to deliver the air centrally because it is already swirling when it reaches the holes and in this case suitable inlet ribs are helpful. From the results given, it is possible to calculate the cooling air duct resistance for other turbines with ducts of similar design. There are 6 figures.

ASSOCIATION: Tsentral'nyy kotloturbinnyy institut
(Central Boiler and Turbine Institute)

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KUNIN, V.; KHLUDTSEV, A.; RATNER, G.

Arbolit for rural construction. Sel'. stroi. 16 no.6:21-22 Je '61. (MIRA 14:7)

1. Glvnyy inzh. Giprostandartdoma (for Kunin). 2. Nachal'nik otdela novykh stroitel'nykh materialov Giprostandartdoma (for Khludtsev).
(Lightweight concrete)

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RATNER, F.Z., inzh.

Determination of optimum degrees of compression and expansion in a complex cycle of a gas turbine. Energomashinostroenie 9 no.11:11-14 N '63. (MIRA 17:2)

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

RATNER, F.Z., inzh.; MALYSHEV, Yu.N.

Calculation of complex hydraulic networks. Izv. vys. ucheb. zav.; energ. 7 no.10:64-71 O '64. (MIRA 17:12)

1. TSentral'nyy nauchno-issledovatel'skiy kotloturbinnyy institut imeni I.I. Polzunova.

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001444

RATNER, F.Z.; TYRYSHKIN, V.G.

Types and basic parameters of gas-turbine units. Standartizatsiia 29 no.2:25-27 F '65. (MIRA 18:4)

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RATNER, F.Z., inzh.

Experimental study of the hydraulic resistance of the intake of a gas turbine rotor air cooling system. Teploenergetika 10 no.2:45-50 F '63. (MIRA 16:2)

1. TSentral'nyy kotloturbinyy institut.
(Gas turbines—Cooliig)

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1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

CA

Apparatus for filling pipets. G. B. Rather. Russ. 25,225, May 24, 1930. A rubber tube attached to the upper end of the pipet is rolled on a cylinder and pressed by a spring, whereby the suction of the liquid in the pipet is regulated.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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