"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8

BARANOV, P.A.

USSR

A new form of complex chlorine-free fertilizers. P. A. Baranov and D. A. Koren'kov. *Zemledelie* 2, No. 8, 60-7 (1954). A mixed crystal from K and NH_4 phosphate soln. is produced carrying N 5, P 50, and K 22-23%. A comparison of this complex with mixts. of salts carrying N-P-K shows the latter to be more superior in terms of crop production. J. S. Joffe

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8

BARANOV, P. A.

USSR

1- Extending the types of mineral fertilizer. P. A. Baranov. *Zemledelie* 2, No. 12, 42-9(1954).—A review of the possible types of P, N, and K fertilizer salts to be used in the respective zonal soils (primarily chernozem and podzolized) for some crops and their effectiveness. J. S. Joffe

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8

BARANOV, Pavel Aleksandrovich, 1892- ; KOREN'KOV, Dmitriy Aleksandrovich

[Potassium fertilizers and their use] Kaliinye udobreniia i ikh primenenie. Moskva, Gos. izd-vo selkhoz. lit-ry, 1956. 95 p.
(Potassium) (MLRA 9:9)

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8

BARANOV, P.A., akademik; KARPINSKIY, N.P., doktor sel'skokhozyaystvennykh nauk; BOYARSKAYA, L.S., redaktor; PERESYPKINA, Z.D., tekhnicheskiy redaktor; ZUBRILINA, Z.P. tekhnicheskiy redaktor.

[Use of fertilizers in the German Democratic Republic] Primenenie udoblenii v GDR. Moskva, Gos.izd-vo sel'khoz.lit-ry, 1957. 157 p. (MLRA 10:6)

(Germany, East--Fertilizers and manures)

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8

BARANOV, P.A.

J

USSR/Soil Science - Mineral Fertilizers.

Abs Jour : Ref Zhur - Biol., No 4, 1958, 15312

Author : P.A. Baranov, D.A. Koren'kov

Inst : The All-Union Scientific Research Institute for Fertilizers and Agricultural Soil Science.

Title : The Effect of Ammonia Water on the Yield and Quality of Agricultural Crops.
(Deystviye ammiachnoy vody na urozhay i kachestvo sel'skokhozyaystvennykh kul'tur).

Orig Pub : Udobreniye i urozhay, 1957, No 4, 10-16.

Abstract : Large-scale experiments were made in 1956 on the use of concentrated (anhydrous) ammonia, ammoniates and ammonia water in the Ukrainian SSR and the Uzbek SSR. To back up these measures, the All-Union Scientific Research Institute for Fertilizers and Soil Science

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USSR/Soil Science - Mineral Fertilizers. J.

Abs Jour : Ref Zhur - Biol., No 4, 1958, 15312

conducted a siries of vegetational and field tests on the experimental grounds in the Moscow and Bryanskaya Oblasts with potatoes, flax and corn and with sugar beets on the weakly leached chernozem soil (pH 6) at Sumskiy Experimental Station. In the vegetative experiment with corn the effects of ammonia water, ammoniate (NH_4NO_3 52.28, NH_3 22.14 and H_2O 23.58%) and N_{aa} were studied on the corn harvest and its N content. The harvest of the total mass was increased 3-4 and the cob yield 8-9 times by all forms of N. The effect of ammonia water applied fractionally was rather weaker on the cob harvest than the ammoniate and N_{aa}. The most effective dressing of ammonia water on potatoes was produced with a 1/6 dosage of N applied 2.5 cm lower than the tuber and 5/6 of a dose applied 5 cm to the sides of the tubers. In Sumskaya Oblast' ammonium

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USSR/Soil Science - Mineral Fertilizers. J.

Abs Jour : Ref Zhur - Biol., No 4, 1958, 15312

nitrate and ammonia water affected the sugar beet yield almost equally, although the quantity of sugar in the beet roots which were fertilized with ammonia water was lower. In the field tests the ammonia water boosted the potato tuber yield by 65-120 centners per hectare and the starch output by 15-20 centners per hectare. With ammonia water dressing from the computed 80 kilograms per hectare of N, the addition to the corn green stuff yield was 127.9 centners per hectare. Dressing the holes and the sides of the beds rather than between rows proves more effective.

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BARANOV, P.A., akademik; KOREN'KOV, D.A., kand. sel'skokhozyaystvennykh nauk.

Effect of ammonia on plant development and yields. Agrobiologiia no.6: 90-99 N-D '57. (MIRA 10:12)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut udobreniy i agropochvovedeniya.

(Plants, Effect of ammonia on)

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8

BARANOV, P.A

USSR / Cultivated Plants, Plants for Technical Use. Oil Plants. -- Sugar Plants.

Abs Jour : Ref Zhur - Biol., No 8, 1958, No 34768

Authors : Baranov, P. A.; Koren'kov, D. A.

Inst : All-Union Institute for Fertilization and Soil Agriculture.

Title : On the Effects of Sodium Nitrate and Calcium Nitrate on Sugar Beet Crops.

Orig Pub : Sakharnaya svekla, 1957, 47, 29-32

Abstract : Vegetation experiments in weakly lixiviated black earth at the Kurskiy and Bumskoiy Experimental stations were conducted from 1954 to 1956 by the All-Union Institute for Fertilization and Soil Agriculture. These have shown that $NaNO_3$, spread on a basis of superphosphate and potassium chlorite, increased the beet crop almost 5 times, while NH_4NO_3 only increased it some three times. On a background

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8

USSR / Cultivated Plants. Plants for Technical Use. Oil Plants. Sugar Plants.

Abs Jour : Ref Zhur - Biol., No 3, 1958, No 34763

of superphosphate and potash salt in which the amount of sodium corresponded to the amount of sodium added in the earlier experiment in the form of $NaNO_3$, $Ca(NO)_2$ had identical effects as $NaNO_3$. The output of sugar, after adding $Ca(NO_3)_2$ to the background of potash salt, was somewhat higher than that obtained when adding $NaNO_3$ to the background of potassium chloride. Consequently, it may be concluded that the cheaper $Ca(NO_3)_2$ is no less effective than the more expensive and somewhat deficient $NaNO_3$, when applied in combination with potassic fertilizers containing sodium. In field experiments undertaken in 1956 at the Bunskoiy Experimental Station, $Ca(NO_3)_2$ on a background of superphosphate in combination

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8

J

COUNTRY : USSR
CATEGORY : Soil Science. Fertilizers.

ABS. JOUR. : RzKhBiol., No. 4, 1959, No. [illegible]

AUTHOR : Baranov, P.A.
INST. : —
TITLE : Application of Liquid Nitrogen Fertilizers in Irrigated Areas of Cotton Planting.

ORIG. PUB. : V sb.: Materialy Ob"yedinen. nauchn. sessii po khlopkovodstvy. T.I. Tashkent, Gosizdat UzSSR, *

ABSTRACT : In a hot climate the tension of ammonia vapor rises markedly, and its application in these republics was related to the large expenditure of non-corrosive metals, the complex technique of the safety factor, and the large losses. It was easy to use an aqueous solution of a monia - ammonium water (II) - for which ordinary fuel vats, which handled easily, were suitable. Such a supply method of II was economical: The capacity of the warehouse, near to railroad tracks,

* 1958, 404-412

Card: 1/2

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8

COUNTRY :
CATEGORY :

ABS. JOUR. : RZhBiol., No. 4 1959, No. [illegible]

AUTHOR :
INST. :
TITLE :

ORIG. PUB. :

ABSTRACT : was [illegible] of the annual demand of II, and from here it was conveyed without interruption to cisterns of the kolkhoz, the total capacity of which was [illegible] - [illegible]; with fall-summer introduction it was [illegible] of the annual expenditure of II in the kolkhoz. -- G.P. Mikhaylova

Card: 2/2

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8

USSR / Soil Science. Fertilizers. General Problems. J

Abs Jour: Ref Zhur-Biol., No 2, 1959, 6081.

Author : Baranov, P. A.
Inst : Not given.
Title : Mineral Fertilizers and Agricultural Productivity. (From a Foreign Experiment).

Orig Pub: Udobreniye i urozhay, 1958, No 2, 58-61.

Abstract: The general consumption of mineral fertilizers in world agriculture (in nutrients) increased in the years 1913 - 1956 by 4.7 times. The consumption of nitrogen fertilizers increased to a greater degree (12.5 times) than phosphorus fertilizers (3 times). The amount of nitrogen applied to 1 hectare of farming land in Europe increased in the year 1956 in comparison to the

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8

USSR / Soil Science. Fertilizers. General Problems. J

Abs Jour: Ref Zhur-Biol., No 2, 1959, 6081.

Abstract: year 1913 from 3 - 4 kg to 10 kg, and in U.S.A. by 17 times. In countries with a predominance of pasture lands over plowlands the consumption of nitrogen in comparison with phosphorus is insignificant (Australia 0.04 - 0.05 kg of nitrogen per hectare, and 1.3 kg of phosphorus per hectare; New Zealand 0.3 kg of nitrogen per hectare and 16.3 kg of phosphorus per hectare). In countries where in the period of 1913 - 1956 an increase in the use of mineral fertilizers, particularly nitrogen fertilizers, is observed, the grain crop (of wheat) for this period increased by 2.5 - 3 times (and the productivity of livestock raising by 8 - 10 times). An especially clear cut case can be seen in the instance of Germany (the Federal Republic of West Germany in the year 1955). In that

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8

USSR / Soil Science. Fertilizers. General Problems. J

Abs Jour: Ref Zhur-Biol., No 2, 1959, 6081.

Abstract: country, in the post war years, the use of mineral fertilizers on meadow and pasture lands brought the productivity of livestock raising to 305 centners of meat per 100 hectares of farming lands and indirectly, due to the increase of the amount of manure, effected an increase of crops (their average productivity after the war based on seed grain was 32 centners per hectare). -- O. P. Medvedeva.

Card 3/3

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8

BARANOV, P.A.

"The Progress of the Investigations in Plant Fertilization, Apomixis and Polyembryony in the U.S.S.R."
Paper submitted for the Int'l Botanical Congress, Montreal, Canada, 19-29 Aug 1959

Komarov Botanical Institute, Academy of Sciences, U.S.S.R., Leningrad.

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8

BARANOV, P.A., akademik; KOREN'KOV, D.A., kand.sel'skokhozyaystvennykh nauk

Using ammonia water as nitrogen fertilizer. Zemledelie 7 no.4: 35-42 Ap '59. (MIRA 12:6)

1. Vsesoyuznaya akademiya sel'skokhozyaystvennykh nauk im. Lenina (for Baranov). 2. Vsesoyuznyy nauchno-issledovatel'skiy institut udobreniy i agropochvovedeniya (for Koren'kov).
(Ammonium hydroxide)

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8

BARANOV, P.

Increase sharply the scale and tempos of the use of chemistry in agriculture. Vop. ekon. no.12:18-26 D '59. (MIRA 12:12)
(Agricultural chemistry)

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8

BARANOV, Pavel Aleksandrovich (1892-)

[Liquid nitrogenous fertilizers] Zhidkie azotnye udobreniia. Moskva, Gos. izd-vo sel'khoz. lit-ry, 1961. 156 p. (MIRA 15:4)

(Fertilizers and manures)

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8

BARANOV, P.A., akademik

Liquid nitrogen fertilizers. Zemledelie 23 no.9:47-55 S '61. (MIRA 14:12)

1. Deystvitel'nyy chlen Vsesoyuznoy akademii sel'skokhozyaystvennykh nauk imeni Lenina.
(Ammonia as fertilizer)

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8

BARANOV,P.A.

Agrochemical characteristics and technological and economic conditions of the rational application of nitrogen fertilizers. Zemljiste biljka 11 no.1/3:255-259 '62

1. Vsesoyuznaya akademiya sel'skokhozyaystvennykh nauk imeni V.I.Lenina, Moskva.

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8

BARANOV, P.A., akad.

Agronomic effectiveness of various forms of mineral fertilizers. Selskostop nauka 1 no.7/8:817-824 '62.

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8

BARANOV, [illegible]; [illegible], [illegible]; [illegible]
[illegible]; STANYUKOVICH, K.V., [illegible].

[Agriculture and farm crops in Gorno-Badakhshan Autonomous Province, Tajik S.S.R.] Semledelie i [illegible]nye kul'tury Gorno-Badakhshanskoi avtonomnoi oblasti Tadzhikskoi SSR. Dushanbe AN Tadzhik SSR. Vol. [illegible]. [illegible]. 20[illegible] p. [illegible]
1. Chlen-korrespondent AN SSSR (for Baranov).

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8

BARANOV, P.A., [illegible]

Use of nitrogen [illegible] '65. [illegible]

1. Vsesoyuznaya akademiya sel'skokhozyaystvennykh nauk imeni Lenina.

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8

BARANOV, [illegible]

[illegible] Leipzig [illegible] no. [illegible] Je '[illegible]. ([illegible])

1. Vsesoyuznaya akademiya sel'skokhozyaystvennykh nauk imeni Lenina.

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8

SINYAGIN, I.I., [illegible], CHEREMISOV, G.A.; NAYDIN, [illegible]; BARANOV, [illegible]; [illegible], N.I.; BALYABO, N.K.; MAMIRENKOV, I.P.

Leonid Nikolaevich Baranov, d. 1965; an obituary. Sovietskie [illegible] no.10:89 [illegible] '65. (MIRA 18:10)

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8

1963

BARANOV, P. A. DECEASED

Corr Mbr AS USSR (c. 1962)

BOTANY

(not the same as agric.-fertilizer-chemist)

[redacted]

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8

BARANOV, P.B.; ZAKHAROV, S.A.

The interrelation of the Pamirs and southern Tien Shan.
Izv.Otd.est.nauk AN Tadzh.SSR no.14:3-11 '56. (MLRA 9:10)

1. Institut geologii AN Tadzhikskoy SSR.
(Pamirs) (Tien Shan)

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8

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PROCESSES AND PROPERTIES INDEX

Influence of the Conditions of Solidification on the Structure of Ingots. P. I. Baranov (*Zvetnye Metally* (*Non-Ferrous Metals*), 1936, (7/8), 102-111; (9), 85-94).—[In Russian.] A study was made of the influence of pouring temperature, rates of cooling, mechanical stirring, and rates of pouring on the macrostructure of cast aluminium. Aluminium ingots (containing 0·1% iron and 0·23% silicon) were cast into an iron mould 240 mm. high and 60 mm. in diameter, with 30 mm. wall-thickness, at casting temperatures from 750° to 950° C. The outer zone of columnar crystals increases with increase in temperature and spreads through the body of the ingot. The same effect occurs with spherical ingots of 55 mm. diameter cast in thin-walled copper moulds. Both the columnar and the equiaxed crystals increase in size with increase in casting temperature. Spherical ingots (60 mm. diameter) cast in thin-walled iron moulds and cooled in different media show a decrease in thickness of the columnar zone with increase in thermal conductivity of the medium. If cooling takes place rapidly the columnar structure may disappear entirely. Grain-size increases with increase in rate of cooling. Ingots cast in moulds made of a kaolin-asbestos mixture exhibit an equiaxed structure throughout the ingot. Up to 250° C., the mould temperature does not affect the macrostructure of cylindrical ingots very greatly. Mechanical stirring during solidification results in considerable grain-refinement. Admixtures, especially mechanical impurities, increase the thickness of the columnar zone and the grain-size.—N. A.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8

The effect of the conditions of solidification on the macro structure of ingots. P. I. Buranov *Tsvetnye Metal.* 1936, No. 9, 89-94; cf. *Ibid.* No. 7-8. The factors affecting formation of columnar crystals in Al ingots are discussed.

H. M. Leicester

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8

Properties of metals.

Met. Abs
V.9

"On the Properties and Methods of Production of Oxygen-Free Copper
P. I. Faranov (*Tsvet. Metally* (*Non-Ferrous Metals*), 1939 (1), 73–83).—(
Russian.) Published information on the production and properties of oxygen
free copper is reviewed. Phosphorus is an efficient deoxidizing agent an
improves the ductility of copper, but has an adverse effect on electrical con
ductivity. A large number of other deoxidizers have been tried. B
experiments, in which lithium and beryllium were used, showed that lithiu
was a little more efficient than beryllium; both additions had very little effe
on electrical conductivity. The best results were achieved by melting electr
lytic copper under carbon in an atmosphere of carbon dioxide and pouru
into vertical wire-bar moulds under carefully controlled conditions.—A. B.

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8

BARANOV, P. I.

"The Properties and Methods of Producing Oxygen-Free Copper," Tsvet. Met., 14, No.6, 1939

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8

CA

9

Aluminum alloy. P. I. Baranov and M. V. Chukhlrov. U.S.S.R. 65,072, Aug. 31, 1945. An Al alloy contain Si 1.0-6.0, Cu 1.5-4.5, Mg 0.2-0.5, and Mn 0.2-0.5%. M. Hoch

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8

BARANOV, P. I.

"Stakhanovite Method - for the Masses," Khar'kov Knizhno-Gazetnoye izd-vo, 1950

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8

SOROKIN, S.Ya. [author]; BARANOV, P.I. [reviewer].

"Die-casting of non-ferrous alloys." S.IA.Sorokin. Reviewed by P.I.Baranov. (MLRA 6:8)
Lit.proizv. no.8:31-32 Ag '53.
(Sorokin, S.IA.) (Die-casting)

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8

BARANOV, P.M.

Work organization in the brigade. Metallurg no.10:18-19 O '56.
(MLRA 9:11)

1. Brigadir strippernogo otdeleniya tsekha podgotovki sostavov Kuznetskogo metallurgicheskogo kombinata.
(Smelting)

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8

BASKO, P.F., kand. tekhn. nauk, dotsent; BARANOV, P.M.

Investigating the carrying capacity and antifriction properties of "stirakril" and its compositions. Vest. mashinostr. 43 no.7: 38-41 Jl '63. (MIRA 16:8)

(Plastics—Testing)

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8

ACCESSION NR: AP3005564 S/0122/63/000/007/0038/0041

AUTHORS: Basko, P. T. (Candidate of technical sciences, Docent); Baranov, P. M.

TITLE: Study of bearing capacity and antifriction properties of "styracryl" and its compounds

SOURCE: Vestnik mashinostroyeniya, no. 7, 1963, 38-41

TOPIC TAGS: styracryl, TSh styracryl, plastic compound, antifriction plastic, screw thread repair, thread repair by plastic, styracryl carrying capacity, styracryl friction property, plastic carrying capacity, plastic friction property

ABSTRACT: The TSh styracryl was used for rebuilding of worm screw thread and for repairing other machine details. This material is a plastic which polymerizes and hardens rapidly without pressure at room temperature. The experiments involved measuring the bearing capacity and antifriction properties of styracryl, either pure or mixed with powders of caprone, copper, iron, nickel, aluminum, graphite, and molybdenum. The structure of samples was determined by the metallographic microscope MIM-6. The temperature was registered with the automatic potentiometer PSR-1-02. Water and MS-20 oil were used as lubricants in the friction tests. Styracryl proved to be a reliable antifriction material suitable for machine

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8

ACCESSION NR: AP3005564

details working at moderate loads at temperatures from 80 to 90C. Its bearing capacity was close to that of caprone, and was influenced by the type of the admixture and the type of lubricant. Its ability to solidify (without pressure) simplified the production of machine details and reduced the cost of the necessary equipment. The samples were nickel-plated by Docent I. N. Bulanzhe at the Department of General and Inorganic Chemistry, KTILP. Orig. art. has: 1 table and 6 figures.

ASSOCIATION: none

SUBMITTED: 00 DATE ACQ: 26Aug63 ENCL: 00

SUB CODE: ML NO REF SOV: 004 OTHER: 000

Card 2/2

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8

BARANOV, P. S.

"Emission and Angular Distribution of High-Velocity Photoneutrons." Acad. Sci. USSR, Physics Inst imeni P. N. Lebedev, Moscow, 1955. (Dissertation for the Degree of Candidate of Physical and Mathematical Sciences)

SO: Knizhnaya Letopis', No. 22, 1955, pp 93-105

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8

BARANOV, P.S.; GOL'DANSKIY, V.I.

Yield and angular distribution of high-energy photoneutrons.
Izv.AN SSSR.Ser.fiz.19 no.5:607-608 S-O '55. (MIRA 9:4)
(Cosmic rays) (Nuclear physics)

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8

BARANOV, P.S.

USSR/Nuclear Physics - Neutron detection FD-2213

Card 1/1 Pub. 146-18/25

Author : Baranov, P. S., and Gol'danskiy, V. I.

Title : Scintillational high-threshold detector of neutrons

Periodical : Zhur. eksp. i teor. fiz. 28, 621-623, May 1955

Abstract : The authors pose the interesting task of realizing a simple sufficiently effective (better than the usual low effectiveness of the order 10^{-4} to 10^{-3}) detector of high-energy neutrons on the basis of the reaction C^{12} (n,2n) C^{11} with threshold 20.2 Mev, as a result of which positron-active isotope C^{11} is formed with period of 20.5 minutes and maximum energy of beta-plus spectrum of about 1 Mev. They present the block schema for the setup, and give the curve for determining the optimum duration of observation of C^{11} disintegration. They thank A. V. Kutsenko and T. I. Kovaleva for aid in the construction of the apparatus. Seven references: e.g. K. O. Oganesyan, Otchet In-ta yadern. problem AN SSSR (Reports of the Institute of Nuclear Problems, Acad. Sci USSR), 1953, in which report the cross section of the above-mentioned reaction is stated to remain practically constant in the energy interval of neutrons from 90 Mev ($22 \cdot 10^{-27}$ cm^2) to 380 Mev ($21 \cdot 10^{-27}$ cm^2).

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

Submitted : January 25, 1955

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8

BARANOV, P. S.

USSR/Nuclear Physics - Photoneutrons of high energy FD-2357

Card 1/1 Pub. 146 - 22/34

Author : Baranov, P. S., and Gol'danskiy, V. I.

Title : Yield and angular distribution of high-energy photoneutrons

Periodical : Zhur. eksp. i teor. fiz. 28, 746-748, Jun 1955

Abstract : The authors note the absence of data on the yield and angular distribution of high-energy photoneutrons because of the difficulty of recording of these neutrons. To obtain such data they employed a high-threshold scintillation detector with 1-2% effectiveness based on the occurrence in organic luminophors of the reaction $C^{12}(n,2n)C^{11}$ (described by P. S. Baranov and V. I. Gol'danskiy, ibid. 28, 1955), namely in the case of Be, C, Al, and Pb nuclei and bremsstralung with energies up to 250 Mev. Results are presented in 4 graphs. They note that their measurements of the cross-section of the reaction $C^{12}(gamma,n)C^{11}$ point to the increase (in the interval of energy of gamma-quanta from 50 to 250 Mev) of the yield of direct photoeffect to a quantity of the order of 10^{-28} cm^2/eff. quantum. Six references: e.g. A. N. Gorbunov, Otchet FIAN, 1953; V. I. Gol'danskiy and V. A. Shkoda-Ul'yanov, ZhETF, 28, 1955.

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

Submitted : January 24, 1955

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8

Baranov, P.S.

120-6-10/36

AUTHORS: Baranov, P.S., Gol'danskiy, V.I., and Roganov, V.S.

TITLE: A High Energy Neutron Dosimeter (Dozimetr neytronov vysokoy energii)

PERIODICAL: Pribory i Tekhnika Eksperimenta, 1957, No.6, pp. 45-49 (USSR)

ABSTRACT: The most sensitive detectors of fast neutrons at the present time are liquid scintillators which record neutron-proton events which take place in the volume of the scintillator (efficiency of a few %). However, these detectors are very sensitive to the electron-photon background. In the present paper, a detector is described employing liquid, organic scintillators. It has an efficiency higher by one order than those previously described (Ref.2). The detector has sufficient sensitivity for use as a high energy neutron dosimeter. The liquid employed is a solution of p-terphenyl in xylol (3.5 g/litre). The detector has a threshold of 20.6 MeV and is based on the reaction $C^{12}(n,2n)C^{11}$. The efficiency of the detector is almost independent of neutron energy in the range 40 - 400 MeV. The detector can be used to measure neutron fluxes corresponding to the tolerance dose with an accuracy of 6%. The dosimeter is not very sensitive to the background of charged particles and photons.

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A High Energy Neutron Dosimeter. 120-6-10/36

There are 6 diagrams and 6 references, 3 of which are Slavic.

ASSOCIATION: The Lebedev Physical Institute of the Ac.Sc. USSR. (Fizicheskiy Institut im. P.N. Lebedeva AN SSSR)

SUBMITTED: June 4, 1957.

AVAILABLE: Library of Congress.

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8

Baranov, P.S.

AUTHORS: Baranov, P. S., Gol'danskiy, V. I., Roganov, V. S. 56-5-7/46

TITLE: The Yield and Angular Distribution of Fast Photoneutrons From Deuterium and Carbon (Vykhod i uglovoye raspredeleniye bystrykh fotoneytronov iz deyteriya i ugleroda)

PERIODICAL: Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, 1957, Vol. 33, Nr 5, pp. 1123-1130 (USSR)

ABSTRACT: The yield of photoneutrons from deuterium and carbon was measured as follows:

E_γ (MeV)	Total yield from D in $\sigma_D \cdot 10^{28} cm^2/\gamma$	Total yield from C in $\sigma_C \cdot 10^{28} cm^2/\gamma$	σ_C/σ_D
170	0,84 ± 0,07	7,20 ± 0,25	8,58 ± 0,66
255	2,06 ± 0,06	18,90 ± 1,35	9,18 ± 1,44

The yields were measured by means of an effective scintillation detector for fast neutrons, based upon the reaction $C^{12}(n,2n)C^{11}$ (fast value 20,6 MeV) in the volum of the liquid scintillator.

In the case of a γ-energy of 225 MeV the angular distribution of the fast neutrons from D changes very intensively since already a considerable yield of photoneutrons from the photo pro-

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The Yield and Angular Distribution of Fast Photoneutrons From Deuterium and Carbon. 56-5-7/36

duction of mesons occurs. There are 2 tables, 4 figures, and 20 references, 5 of which are Slavic.

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

SUBMITTED: May 20, 1957

AVAILABLE: Library of Congress

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8

BARANOV, P. S., GOLDANSKIY, V. I., and ROGANOV, V. S.

"High-Energy Neutron Dosimeter."

paper to be presented at 2nd Un Intl. Conf. on the peaceful uses of Atomic Energy, 1 - 13 Sept 58.

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BARANOV, P.S.

PHASE I BOOK EXPLOITATION SOV/2713

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

Doklady sovetskikh uchenykh: polucheniye i primeneniye izotopov (Reports of Soviet Scientists: Production and Application of Isotopes) Moscow, Atomizdat, 1959. 388 p. (Series: Its: Trudy, vol. 6) 8,000 copies printed.

Eds. (Title page): G.V. Kurdyumov, Academician, and I.I. Novikov, Corresponding Member, USSR Academy of Sciences; Ed. (Inside book): Z.D. Andreyenko; Tech. Ed.: Z.D. Andreyenko.

PURPOSE: This book is intended for scientists, engineers, physicians, and biologists engaged in the production and application of atomic energy to peaceful uses; for professors and graduate and undergraduate students of higher technical schools where nuclear science is taught; and for the general public interested in atomic science and technology.

COVERAGE: This is volume 6 of a 6-volume set of reports delivered by Soviet scientists at the Second International Conference on the Peaceful Uses of Atomic Energy held in Geneva from September 1 to 13, 1958. Volume 6 contains 32 reports on: 1) modern methods for the production of stable radioactive isotopes and their labeled compounds, 2) research results obtained with the aid of isotopes in the field of chemistry, metallurgy, machine building, and agriculture, and 3) dosimetry of ionizing radiation. Volume 6 was edited by: S.V. Levinskiy, Candidate of Medical Sciences; V.N. Frusakov, Candidate of Chemical Sciences; and V.V. Setov, Candidate of Medical Sciences. See Sov/2681 for titles of volumes of the set. References appear at the end of the articles.

16. Bibergal', A.V., V.L. Karpov, and V.I. Sinitsya. Cobalt Sources of High Intensity for Radiative Action (Report No. 2234) 200

17. Gusev, N.G., Ye. Ye. Kuraev, and V.I. Popov. Gamma Radiation Inside and Outside Extended Sources (Report No. 2008) 211

18. Aglintsev, K.K., M.A. Bak, V.V. Bochkarev, Ye.G. Gracheva, L.V. Tershova, and K.A. Petrzhak. System of Radiometric Measurement of Radioactive Isotopes (Report No. 2087) 227

19. Aglintsev, K.K., V.P. Kasatkin, V.V. Mitrofanov, and V.V. Chirnov. Application of Nuclear Spectroscopy Methods to Beta and Gamma-ray Dosimetry (Report No. 2503) 237

20. Baranov, P.S., V.I. Goldanskiy, and V.S. Roganov. Instrument for Measuring Small Streams of High-energy Neutrons (Report No. 2043) 244

21. Chubakov, A.A., V.I. Polikarpov, and V.A. Kulebova. Measuring and Analyzing Air Contamination by Low Concentrations of Aerosol Alpha Emitters (Report No. 2130) 248

22. Zalenskiy, O.V., V.L. Vorobeynskiy, and O.A. Semikhatova. Photosynthesis Studies by Quantitative Radiometric Methods (Report No. 2135) 260

23. Rakitin, Yu.V. and A.V. Krylov. Studying the Transfer, Distribution, and Transformation of Certain Physiologically Active Compounds in Plants (Report No. 2133) 274

24. Gunar, I.I., Ye.Ya. Krastina, and A.Ye. Petrov-Spiridonov. Rhythm of Absorption and Secretion in Roots (Report No. 2233) 285

25. Akhromeyko, A.I., and V.A. Shestakova. Effect of the Rhizospheric Microorganisms on the Absorption and Secretion of Phosphorus and Sulfur by the Seedling Roots of Woody Plants (Report No. 2512) 306

26. Razumov, V.I., and N.D. Feofanova. Absorption of Phosphorus Tracers by Cultivated Plants in Relation to Their Resistance to Cold (Report No. 2313) 315

27. Andreyev, G.V., A.V. Voyevodin, V.A. Molchanova, and A.V. Khotyanovich. Some Results of Using Radioactive Isotopes for Plant Protection (Report No. 2309) 322

Alloys of Zirconium and Titanium Base by the Radioactive Isotope Method (Report No. 2526) 189

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E032/E314

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AUTHORS: Baranov, P.S., Slovokhotov, L.I., Sokol, G.A. and Shtarkov, L.N.

TITLE: A Differential Method for Determining the Efficiency of a γ-counter

PERIODICAL: Pribory i tekhnika eksperimenta, 1961, No. 3, pp. 63 - 66

TEXT: The present authors describe a method which can be used to determine the efficiency of a γ-counter in the energy range up to some hundreds of MeV. The method is based on the recording of coincidences between the proton and the γ-ray which appear during the photo-production of neutral mesons on hydrogen. A block diagram of the apparatus is shown in Fig. 2. The γ-ray beam has a maximum energy of 265 MeV and was obtained from the synchrotron of the Physics Institute of the AS USSR. It was collimated by two lead collimators before reaching the liquid-hydrogen target. The latter consisted of a thin-walled container (brass wall 15 mg/cm^2 thick) having a volume of

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100 cm^3. Protons from the reaction:

$$\gamma + p = p + \pi^0 \quad (1)$$

$$\pi^0 = 2\gamma \quad (2)$$

passed through aluminium windows (250 μ) and were recorded by a telescope consisting of three proportional counters connected in coincidence (resolution equals 2×10^{-6} sec) and a single scintillation counter connected in coincidence with a γ-ray counter (resolving time of the fast coincidence circuit: 5×10^{-9} sec). The proton telescope records protons with energies $E_p \pm \Delta E_p$, where ΔE_p is determined by an absorber placed in front of the telescope and the discriminator of the third counter. The protons are separated from the charged mesons in the first and second counters of the telescope, using the difference in the specific energy losses of these particles.

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E032/E314

A Differential Method ....

The γ-counter consists of two scintillators (3.5 g/litre solution of para-terphenyl in phenyl-cyclohexane). The scintillators are 15 cm in diameter and 3 cm thick and are mounted on ФЭУ-33 (FEU-33) photomultipliers. In order to increase the efficiency of the γ-counter, lead converters, 0.8 cm thick, were placed in front of the counters. The scintillation counter in the proton telescope consisted of a plastic scintillator (terphenyl in polystyrene), 0.5 cm thick and 6 cm in diameter. It was mounted on a perspex light pipe and an FEU-33 photomultiplier. Recording of the coincidences between the scintillation channels was achieved with the "fast" coincidence circuit described by A.A. Rudenko (Ref. 1 - PTE, 1958, No. 6, 60). The resolution and efficiency of this coincidence circuit was checked in special experiments. The efficiency of recording of the coincidences turned out to be 95% In these experiments there was an appreciable proton background due to the target walls and the Compton scattering of the γ-rays

Card 3/8

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$$\gamma + p = \gamma' + p' \qquad (5) .$$

The proton background was determined with an empty target and was found to be 10%. The proton yield, due to the reaction (5) was neglected since the corresponding reaction cross-section was lower by two orders of magnitude than the cross-section of the reaction (1). On the other hand, the $p\gamma$-coincidence background can be excluded entirely by suitable disposition of the proton telescope in the γ-counter. Fig. 3 shows the efficiency of the γ-counter η (in %) as a function of the γ-ray energy in MeV. The points are experimental and the curve is calculated from the formula

$$\eta = \left[1 - \exp(-2\mu T)\right] \frac{(bT - 1, y_o)!}{\Gamma(bT)} \qquad (6)$$

where μ is the γ-ray absorption coefficient for lead

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(Ref. 2 - Heitler, V. - Quantum Theory of Radiation, 1956, Izd-vo IL), T is the thickness of the lead converter, $(bT - 1, y_o)!$ is the incomplete gamma-function, $b = 2.6\ cm^{-1}$ (for Pb), $y_o = \ln(E_e^{max}/E_e^{min})$, E_e^{max} is the maximum electron energy and E_e^{min} is the minimum electron energy corresponding to the threshold of the fast coincidence circuit (2 MeV). If the proton telescope records only protons with energies $E_p \pm \Delta E_p$, leaving at an angle $\theta_p \pm \Delta\theta_p$ to the direction of the primary photon beam, then the kinematics of the photo-production of π^o-meson (1) and the π^o-meson decay (2) can be used to determine the energy spread of the γ-rays recorded in coincidence with the protons.

Acknowledgements to P.A. Cherenkov for his interest and to T.I. Kovalexa for taking part in the construction of the fast coincidence circuit.

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27697

A Differential Method S/120/61/000/003/007/041
E032/E314

There are 3 figures and 2 Soviet references.

ASSOCIATION: Fizicheskiy institut AN SSSR (Physics Institute of the AS USSR)

SUBMITTED: August 3, 1960

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S/056/61/041/006/004/054
B108/B138

AUTHORS: Baranov, P. S., Slovokhotov, L. I., Sokol, G. A., Shtarkov, L.N.

TITLE: Elastic scattering of 247-Mev gamma quanta from hydrogen

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 41, no. 6(12), 1961, 1713-1721

TEXT: Experimental data are very scarce on elastic gamma scattering from hydrogen involving energies higher than the meson photoexcitation threshold. Such information is indispensable in establishing a theory of Compton effect in this energy region, and may provide information on proton structure. The authors studied the angular distribution of gamma quanta, with energies of (247 ± 10) Mev, scattered from liquid hydrogen. The coincidences of scattered gamma quanta and recoil protons were recorded. By determining the energy of the recoil protons at a fixed gamma energy, the desired process $\gamma + p \longrightarrow p' + \gamma'$ (1) could be distinguished from the background process $\gamma + p \longrightarrow p' + \pi^0$ (2), $\pi^0 \rightarrow \gamma_1 + \gamma_2$

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Results are given in the Table. The error in the cross section of reaction (1) is about ± 15 %. Only for departure angles of 56 and 74° (c.m.s.) of the gamma quanta does the error amount to some 25 %. The results are in qualitative agreement with those of other publications. Discrepancies between the experimental results and theoretical calculations on the basis of one-dimensional dispersion relations are mainly due to deficiencies in the theory. The studies were made at the synchrotron of the Lebedev Physics Institute (see Association entry). The authors thank Professor P. A. Cherenkov, Professor V. I. Gol'danskiy, Doctor of Physics and Mathematics A. M. Baldin, and the synchrotron team for their collaboration. N. N. Bogolyubov, D. V. Shirkov (DAN SSSR, 113, 529, 1957), L. I. Lapidus, Chou Kuang-chao (ZhETF, 39, 1056, 1960), and N. F. Nelipa, L. V. Fil'kov (Preprint FIAN, A-2, 1961) are mentioned. There are 5 figures, 1 table, and 17 references: 9 Soviet and 8 non-Soviet. The three most recent references to English-language publications read as follows: M. Jakob, J. Mathews, Phys. Rev., 117, 854, 1960; R. Blokil et al. Phys. Rev. Lett., 5, 384, 1960; A. V. Tollestrup et al. Proc. 1960. Ann. Intern. Conf. on High Energy Physics at Rochester, p. 27.

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Elastic scattering of 247-Mev...

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B108/B138

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

SUBMITTED: June 9, 1961

Legend to the Table: (1) degrees, (2) laboratory system, (3) center of mass system, (4) ratio ($\times 10^4$) of the products of reaction (1) to reaction (2), (5) cm^2/steradian.

θ_p, град 1	θ_γ, град 1	θ^*_γ, град 1	$\bar{\theta}_p$ (л. с.), град 1 2	$\Delta\bar{\theta}_p$ (л. с.), град 1 2	$\bar{\theta}_\gamma$ (с. ц. м), град 1 3	$\bar{E}_\gamma$, MeV	$\Delta\bar{E}_\gamma$, MeV	4 Отношение выходов ($\times 10^4$) реакций (1) и (2)	$\frac{d\sigma}{d\Omega} / \left(\frac{c^2}{Mc^2}\right)^2$, см²/стерад 5 (с. ц. м) 3
16	140	104	15,5	±1,65	148,0	247,7	± 5	140±12	4,17±0,35
24	121	94	23,5	±1,70	132,2	247,8	± 5	110±9,0	3,33±0,28
36	94	140	35,0	±1,70	108,8	247,2	± 5	74±8,0	3,09±0,33
44	78	—	42,5	±1,70	93,1	245,2	± 6	25,7±2,7	2,08±0,24
56	56	94	54,5	±2,0	70,3	237,0	±15	9,43±1,37	1,60±0,20
64	42	76	62,0	±2,0	54,8	232,6	±15	8,07±1,07	1,34±0,18

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BARANOV, P. S.; SLOVOKHOTOV, L. I.; SOKOL, G. A.; SHTARKOV, L. N.

"Elastic Scattering of γ -Rays by Hydrogen at the Energy 247 MEV"

report presented at the Intl. Conference on High Energy Physics, Geneva, 4-11 July 1962

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ACC NR: AP6007216 SOURCE CODE: UR/0056/66/050/002/0364/0366

AUTHORS: Baranov, P. S.; Slovokhotov, L. I.; Sokol, G. A.; Shtarkov, L. N.

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

TITLE: Refinement of the experimental values of the Compton effect cross sections for the proton

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 50, no. 2, 1966, 364-366

TOPIC TAGS: Compton effect, proton interaction, differential cross section, angular distribution, gamma quantum

ABSTRACT: This is a continuation of earlier work on the angular dependence of the Compton effect cross section for the proton at an average gamma-quantum energy of 247 Mev (ZhETF v. 41, 1713, 1961). In the present work the authors calculate the differential cross sections for the Compton effect on the proton at gamma quantum energies

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from 230 to 250 Mev, using a more accurate analysis and making absolute the earlier experimental data. The analysis of the earlier data was with the aid of an electronic computer, so that the approximations of the original analysis could be eliminated. The more accurate values are approximately 20 -- 30% higher than in the earlier work, but the angular distribution has not changed noticeably. The total cross section obtained for the Compton effect at 248 Mev is $(95.0 \pm 9.3) \times 10^{-32}$. Orig. art. has: 3 formulas and 1 table.

SUB CODE: 20/ SUBM DATE: 01Sep65 ORIG REF: 002/ OTH REF: 004

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8

BARANOV, P. V.; SYROVATKO, N. V.; RAYKHEL', B. L.

Mining Engineering

Applying the analytic method in mining (continued). Gor. zhur. no. 4, 1952.

Monthly List of Russian Accessions, Library of Congress, April 1952. Unclassified.

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8

BARANOV, Pavel Vasil'yevich, laureat Stalinskoy premii; PANKOVA, V.M., redaktor; RAKOV, S.I., tekhnicheskiy redaktor

[Our experience in full utilization equipment] Nash opyt ispol'-zovaniia rezervov oborudovaniia. (Moskva] Izd-vo VTsSPS Profizdat, 1955. 60 p.
(MLRA 9:1)

1. Starshiy master vyazal'nogo tsekha no.1 Moskovskoy chulochnoy fabriki imeni Nogina, (for Baranov)
(Hosiery)

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8

BARANOV, P.V.;PRIKHNYA, G.P.

Technical and economic indexes of operations of the Tyrny-Auz Combine. Gor. zhur. no.3:19-28 Mr '57. (MLRA 10:4)

1. Nachal'nik proizvodstvenno-tekhnicheskogo otdela kombinata (for Baranov). 2. Nachal'nik planovogo otdela kombinata (for Prikhnya). (Tyrny-Auz--Mining engineering) (Molybdenum ores) (Tungsten ores)

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B104/B205

6.7800

AUTHOR: Baranov, R. A., Engineer, and Labzin, N. N., Engineer

TITLE: Contactless small-size remote signaling device of type УТС-3 (UTS-3)

PERIODICAL: Priborostroyeniye, no. 4, 1961, 18-20

TEXT: The TsLEM Mosenergo (Central Laboratory and Experimental Workshop of Electrical Measurements and Instruments of the Moscow Regional Power System) has developed a remote signaling device, the basic units of which operate with contactless components. The new device was designed in cooperation with Engineer M. R. Fishkin. It uses several communication channels and operates on the principle of pulse indication with respect to time. The output data are obtained as a continuous series of pulses of different width and spacing. The series has the following time parameters for various signals:

Number of signal	Duration, msec	
	Pulse	Spacing
1	110	25
2	25	110
3	25	25

Card 1/6

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22733

Contactless small-size remote... S/119/61/000/004/003/005
B104/B205

The device consists of a pulse generator, an amplifier, a transmission line, and a dispatcher. The dispatcher includes a unit for pulse reception, a decipherer, and a signal-fixing unit. The first two units are schematically shown in Fig. 3. The pulse generator consists of the two transistors T_1 and T_2 and the amplifier of the two transistors T_3 and T_4. In the absence of signals at the control point to the generator, the supply of the pulse generator is interrupted. Pulses of varying duration are produced by three relays, $P_1 - P_3$, the frequency of which is proportional to the voltage applied. The shape of the pulses is shown in Fig. 1. The dispatcher is schematically shown in Fig. 4. The pulse-reception unit consists of a linear relay, Π, and a linear transformer, Tp_1, and decipherer unit is a flip-flop circuit which may occupy any position in the absence of a signal. The position of the trigger is changed by the passage of signals; during the duration of one pulse the transistor T_2 is open, and during an interval, the transistor T_1. The time for which the trigger is in one or the other position is determined by the duration of the pulse or

Card 2/6

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the interval. The alternating conduction of the trigger branches is used to control the signal-fixing unit. The transistors T_4 and T_5 controlled in this manner feed the coils of the relays $P_1 - P_3$. One of the three relays is operated, depending on the type of pulse (Fig. 1). This is achieved by a proper choice of the parameters of the chokes $Dp_1 - Dp_4$, which are adapted to the parameters of the relay coils. There are 5 figures and 1 table.

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8

LABZIN, N.N., BARANOV, R.A., inzh.

Contactless TMT-1 remote control and signaling devices. Elek. sta. 34 no.8:58-60 Ag '63. (MIRA 16:11)

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8

LABZIN, N.N.; PARAMOV, R.A.

Flashing light signal for dispatcher stations. Biul.tekh.-ekon.inform.Gos.nauch.-issl.inst.nauch.i tekh.inform. 17 no.1:37-38 '64. (MIRA 17:2)

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8

L 12941-65

ACCESSION NR: AP4048499

S/0119/64/000/008/0011/0013

AUTHOR: Baranov, R. A.; Labzin, N. N.

TITLE Multivibrator for telecontrol devices

B

SOURCE: Priborostroyeniye, no. 8, 1964, 11-13

TOPIC TAGS: telesignalization device, controlled pulse generator, junction transistor multivibrator

ABSTRACT: In the Central Laboratories and Experimental Workshops (TsLEM) of the Moscow Rayon Administration of the Power Economy (Mosenergo), telesignalization devices (UTS-3, TMT-1) with a controlled pulse generator were developed. During development of the controlled generator, the laboratory used a junction transistor multivibrator (circuit shown in figure 1). The article shows why this multivibrator could not be used satisfactorily as a controlled pulse generator, and describes the circuit of a successful new multivibrator (figure 2). The circuit of the new multivibrator is employed in a Type TMT-1 telesignalization device which is produced by the TsLEM of Mosenergo. There are two figures; the bibliography contains six Soviet items.

Card 1/2

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8

L 12941-65

ACCESSION NR: AP4048499

ASSOCIATION: none

SUBMITTED: 00 ENCL: 00 SUB CODE: EC

NO REF SOV: 006 OTHER: 000 JPRS

Card 2/2

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8

L 56490-65

ACCESSION NR: AP5017805

UR/0286/65/000/011/0039/0040
621.373.52

AUTHOR: Labzin, N. N.; Baranov, R. A.; Gorinshteyn, L. L.

TITLE: A multivibrator. Class 21, No. 171433

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 11, 1965, 39-40

TOPIC TAGS: relaxation oscillator, transistorized circuit

ABSTRACT: This Author's Certificate introduces a multivibrator based on two capacitance-coupled transistors. Operational stability is maintained during oscillations in the supply voltage by connecting semiconductor diodes in the forward direction in the collector circuits of the transistors in series with the load.

ASSOCIATION: none

SUBMITTED: 08Dec62 ENCL: 01 SUB CODE: EC

NO REF SOV: 000 OTHER: 000

Card 1/1

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8

BARANOV, R. I.

AUTHOR: Baranov, R.I. 130-58-2-20/21

TITLE: Automation of a Compressor Installation (Avtomatizatsiya kompressornoy stantsii)

PERIODICAL: Metallurg, 1958, Nr 2, p 38 (USSR)

ABSTRACT: This brief note describes a system of automatic signalling and control installed in the compressor house at the "Krasnyy Oktyabr" Works. This contains four compressors rated at 60 m^3/min. of compressed air and one electroturbo-compressor rated at 200 m^3/min. The former are driven by synchronous, the latter by a non-synchronous motor. The installation includes transformers. The results in man-power requirements of automation of the installation are briefly mentioned.

ASSOCIATION: Zavod "Krasnyy Oktyabr'" ("Krasnyy Oktyabr'" Works)

AVAILABLE: Library of Congress

Card 1/1

1. Air compressors-Control 2. Air compressors-Automation

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8

ACCESSION NR: AP4032880 S/0051/64/016/004/0713/0714

AUTHOR: Baranov, R.I.; Kry*lov, K.I.; Sharlay, S.F.

TITLE: Persistent afterglow of ruby crystals after irradiation with powerful light flashes

SOURCE: Optika i spektroskopiya, v.16, no.4, 1964, 713-714

TOPIC TAGS: phosphorescence, ruby phosphorescence, ruby afterglow, leucosapphire phosphorescence, ruby, leucosapphire, corundum

ABSTRACT: Although there have been many investigations of ruby crystals with different Cr_2O_3 concentrations, until recently there have been no studies of the persistent afterglow (phosphorescence) of such crystals. A.F.Gabrysh, H.Eyring, V.LeFebre and M.D.Evast (J.Appl.Phys.33,3389,1962) describe the phosphorescence of corundum and ruby crystals at 77°K after gamma irradiation. P.W.Levy (Phys.Rev.123, 1226,1961) reported observing afterglow in connection with investigation of defects formed in corundum crystals as a result of neutron and gamma-ray irradiation. The present brief note outlines the results of observation of phosphorescence type afterglow in corundum and ruby crystals not subjected to preliminary gamma-ray irradiation.

Card 1/2

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ACCESSION NR: AP4032880

The afterglow was observed after stimulation of the crystals with strong flashes from an IFK-2000 infrared flash tube. The duration of the exciting pulses was 0.8 millisec; the power varied in the range from 300 to 2000 joules. The flash power requisite for producing afterglow decreased with decreasing temperature. After several flash irradiations a leucosapphire crystal became colored brown. At 77°K the afterglow could be observed visually for about 3 min, and detected by means of a photomultiplier for as long as 7-9 min; the persistence was much shorter at room temperature. Tests with light filters showed that the afterglow is excited by radiation in the 300 to 500 mμ region. The spectral composition of the afterglow varied with temperature. The phosphorescence was observed in the case of leucosapphire and pink ruby crystals, but was not detected in the case of dark red ruby crystals.

ASSOCIATION: none

SUBMITTED: 31Jul63

ATD PRESS: 3072

ENCL: 00

SUB CODE: SS, MT

NR REF SOV: 000

OTHER: 002

Card 2/2

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8

40396

S/194/62/000/006/102/232
D288/D308

AUTHORS: Baranov, R.Kh. Gukhman, G.A., Okhotin, A.S., and Eydinova, G.T.

TITLE: Investigation of thermo-electrical properties of tellurium compounds

PERIODICAL: Referativnyy zhurnal. Avtomatika i radioelektronika, no. 6, 1962, abstract 6-4-42 a (V sb. Teploenergetika, no. 3, M., AN SSSR, 1961, 37-57)

TEXT: Thermo-e.m.f. E, electrical conductivity σ, thermal conductivity λ and other characteristics of tellurium compounds are investigated. To obtain the E(T) dependence, the temperature of one end of the specimen was maintained at room temperature T_x, the other end was heated to T_g. T_x and T_g were measured by thermocouples; analogous branches of the latter being used to measure E. E(T) dependence was taken at constant T_x. Graphic differentiation yielded $\alpha = dE/dT$. For small $T_g - T_x$ α was obtained according to $\alpha =$

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$= E/(T_g - T_x)$. The specimen was pressed, by means of a weight, to a water cooler. The hot end was heated by a flat Mo heating element, current being supplied to it through the mounting bracket. To avoid oxidation of the specimens and ensure reliable operation of the heater, the whole equipment was placed in vacuum. Connections to the installation were led through the plate by threaded seals, evacuation was by a pump PBH-20 (RVN-20). Pressure was measured by vacuum meter ВИТ-1 (VIT-1). For Hall effect measurements a magnetic field of 6100 oe was applied. The following compounds were investigated: FeTe, CoTe, GeTe, PdTe, AgTe, Ag_3Te_2, Ag_2Te, InTe, In_2Te, SnTe, Sb_2Te_3, PbTe, Bi_2Te_3. The Te-metal alloys were prepared at varying Te concentrations - in 10 % steps, and in the zone of chemical compounds - in 2 % steps. The composition of chemical compounds was established by measuring thermal e.m.f. Measurement results are given: 1) PbTe. Curves of λ, σ, α and z vs. T are plotted, for pure PbTe and for PbTe with 0.05 %; 0.08 %; 0.01 % admixture of Cu. /α/ increases with T and does not change much with Cu content, σ drops with increasing T. At room temperatures σ changes little

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with Cu content and is about 900 $ohm^{-1}cm^{-1}$. With increasing concentration of the admixture the drop of $\sigma(T)$ slows down. $\lambda(T)$ curves have a minimum in the cases 1, 2, 3 and a maximum in case 4. PbTe + + 0.08 Cu is best for thermo-elements, in which case Z changes little up to 400°C, with a maximum $z = 2.5 \cdot 10^{-3}$ 1/deg. From the constancy of the sign of the Hall constant and α it is concluded that the sign of electrical conductivity (electron conduction) is constant. The temperature dependence of mobility $\mu(T)$ is given. In pure PbTe at high T, $\mu \sim T^{-5/2}$ (2-photon processes), at low T, $\mu \sim T^{-3/2}$. Effective mass values, derived from formulas for thermo-e.m.f., for different Cu concentration are correspondingly 1.5; 3; 1; $1 \cdot 10^{-7}$g at $T \sim 293°K$. 2) Bi_2Te_3. Curves of z, σ, λ, and α vs. T are plotted for pure Bi_2Te_3 with admixture of CuBr. Bi_2Te_3 + 0.1 % CuBr has $z = 1.1 \cdot 10^{-3}$ 1/deg. Effective mass was derived from formulas for concentration and thermo-e.m.f. taking degeneration into account. 3) Ag_2Te differs sharply from other Ag - Te compounds. /α/ increases with T, α is small and changes little with T, z increases with T and is $0.5 \cdot 10^{-3}$ 1/deg at 150°C. Destruction of the compound takes

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8

Investigation of thermo-electrical ... S/194/62/000/006/102/232
D288/D308

place at 150 - 200°C, $\mu \sim T^{-2}$. 4) SnTe. SnTe + 1 % J is best for thermoelements, then $z = 0.8 \cdot 10^{-3}$ 1/deg at 350°C. Values of z and α are stable up to 350°C, those of λ and σ - up to 500°C. 5) Sb_2Te_3. Curve for z has a maximum at 100°C; $\mu \sim T^{-1}$; α and λ increase and σ decreases with rising T. The 5 compounds described are considered as most suitable for thermo-elements. All compounds were investigated against PbTe as standard. From the obtained data of z it is concluded that the efficiency of a compound in thermo-elements increases with rising molecular weight. 7 references. [Abstracter's note: Complete translation.]

Card 4/4

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8

BARANOV, S., starshiy inzh.

We are presenting the account to the designers. Neftianik 6 no.11:9 N '61. (MIRA 14:12)

1. Tekhnicheskiy otdel upravleniya Stalingradneftegaz. (Volgorad Province--Boring)

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8

AUTHOR: Baranov, S. (Krasnodar)

SOV/84-58-8-46/59

TITLE: Regulations Concerning Transportation of Fruit and Vegetables Need Revision (Peresmotret' pravila perevozok ovoshchey i fruktov)

PERIODICAL: Grazhdanskaya aviatsiya, 1958, Nr 8, p 31 (USSR)

ABSTRACT: In this letter to the editor, the author proposes to free the airports from inspecting and determining the condition of goods and from the responsibility for losses through spoilage. The responsibility of airports should be confined to the delivery of a shipment within an agreed time.

Card 1/1

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8

BARANOV, S.; KOVALEV, N., inzh. po ekspluatatsii domov; BELOV, D., chlen partbyuro; KHANIN, B.

Our report on the work of the apartment house office No.6. Zhil.-kom. khoz. 8 no.9:27-29 '58. (MIRA 11:10)

1. Glavnyy inzh. zhilishchnoy kontory No.6 Oktyabr'skogo rayona Leningrada (for Baranov). 2. Zhilishchnaya kontora No.6 Oktyabr'skogo rayona Leningrada (for Kovalev, Belov, Khanin). 3. Predsedatel' komiteta pervichnoy organizatsii Krasnogo Kresta (for Khanin).
(Leningrad--Apartment houses--Management)

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8

BARANOV, S. (Gor. Krasnodar)

Review the rules for the transportation of vegtables and fruits. Grazhd. av. 15 no.8:31 Ag '58. (MIRA 11:9)
(Aeronautics, Commercial)

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8

BARANOV, S.

This will speed up the loading of planes. Grazhd.av. 16 no.3:8 Mr '59. (MIRA 12:4)

1. Nachal'nik otdela perevozok aeroporta zor. Krasnodar.
(Aeronautics, Commercial--Freight)

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8

BARANOV, S., inzh.

Daylight development of photoprints. Izobr.i rats. no.12:52 D '60. (MIRA 13:12)

1. Kuznetskiy metallurgicheskiy kombinat, Stalinsk.
(Photography--Printing processes)

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8

BARANOV, S., polkovnik, kand.istoricheskikh nauk; NIKITIN, Ye., polkovnik, kand.istoricheskikh nauk

Leadership of the CPSU is the basis of the principles of the Soviet military structure. Komm. Vooruzh. Sil 3 no.8:17-25 Ap '63. (MIRA 16:5)

(Russia--Armed forces--Political activity)

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8

BARANOV, S.

Not in number, but in ability. Grazhd. av. 21 no.5:6-8 My '64. (MIRA 18:4)

1. Nachal'nik sluzhby perevozok Krasnodarskogo aeroporta.

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8

BARANOV, Sergey Alekseyevich; GOL'DSHTEYN, S.A., red.; CHUNAYEVA, Z.V., tekhn.red.

[Canine distemper] Chuma sobak. Moskva, Gos.izd-vo sel'khoz.lit-ry, 1959. 43 p. (MIRA 12:6)
(Distemper)

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8

BARANOV, S.A.

AMS/A+B

PROCESSES AND PROPERTIES INDEX

MAR 1951

2.3-157

551.583.7

Baranov, S. and Pokrovskaia, Taisia, **Rabota meteorologicheskoi gruppy EKNE 1935 g.** [Meteorological observations made on the Elbrus by the Complex Expedition of the Academy of Sciences of the USSR (1935).] (In Trudy El'brusskoi Ekspeditsii Akademii Nauk, SSSR, i Vsesoiuznogo Instituta Eksperimental'noi Meditsiny 1934 i 1935. [Reports of the Elbrus Expedition 1934 and 1935.] Moscow, 1936. p. 199-205. 2 figs., 2 photos, 2 tables, 2 refs. Summary in English p. 207, 209. [*Ak. Nauk, SSSR, Komissiia po izucheniiu stratosfery*, Tom II]) DLC—The meteorological data summarized deal with the direction and velocity of the winds on Mount Elbrus, the changes of temperature with elevation and the dependence of these changes upon surface relief; and with the relationship of atmospheric humidity to air masses. *Subject Headings:* **Mountain meteorology, Elbrus expedition, Caucasus Mountains, U.S.S.R.**—*I.L.D.*

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8

PESOTSKIY, A.N., doktor tekhnicheskikh nauk; BARANOV, S.A., inzhener.

Improve the use of resonant wood. Der.i lesokhim. prom. 3 no.5:5-7 My '54. (MLRA 7:6)

1. Leningradskaya ordena Lenina lesotekhnicheskaya akademiya im. S.M.Kirova. (Wood)

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8

BARANOV, S. A.

BARANOV, S. A.: "Investigation of methods of rational cutting of 'resonance' timber." Min Higher Education USSR. Leningrad Order of Lenin Forestry Engineering Academy imeni S. M. Kirov. Leningrad, 1956. (Dissertation for the Degree of Candidate in Technical Sciences)

So: Knizhnaya Letopis', No. 18, 1956

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8

Baranov, S. A.

The energy levels of the neptunium-237 nucleus and the decay of americium-242m. S. A. Baranov and K. N. Shlyagin. *Sessiya Akad. Nauk S.S.S.R. po Mirnomu Ispol'zovaniyu Atomnoi Energii Zasedaniya Otdel. Fiz.-Mat. Nauk* 1955, 251–68(English summary, 268–9).—The radiations of U^{237}, Am^{241}, and Am^{242m} were studied by using a magnetic double-focussing β-ray spectrometer, and other instruments. U^{237} and Am^{241} were used to det. the energy levels of the Np^{237} nucleus; the decay scheme for Am^{242m} was detd. U^{237} was obtained from $U^{236}(n,\gamma)U^{237}$, Am^{242m} from $Am^{241}(n,\gamma)Am^{242m}$. The Am^{241} was chemically sepd. from Pu enriched with Pu^{241}. The U^{237} electron spectrum was studied from 1 to 300 e.kv. Its β-decay is accompanied by the radiation of many conversion and Auger electrons. There are two β-components with end-point energies of $E_{\beta 1} = 84 \pm 5$ e.kv. and $E_{\beta 2} = 249 \pm 5$ e.kv. in the decay, and the following transitions of the Np^{237} nuclei: $E = 26, 33, 43, 60, 097, 101, 1247, 165, 1037, 208, 268, 330, 370$, and 433 e.kv. The following transitions of Np^{237} were also detd. in studying the electron spectrum of Am^{241}: $E_\gamma = 26, 33, 43, 55, 60$, and 99 e.kv. From these values the following energy levels of the Np^{237} nucleus were detd.: 0, 33.22, 59.62, 103.55, 158.55, 227, 268, and 433 e.kv., the first 6 levels corresponding to the spins 5/2±, 7/2±, 5/2±, 7/2±, 9/2±, 11/2±. The electron spectrum of Am^{242m} was investigated from 1 to 700 e.kv. Ten conversion lines and 3 Auger-electron groups were detected; the intensities decreased with the half-life which is approx. 16 hrs. There are two β-components occurring in the decay of $Am^{242m} \rightarrow Cm^{242}$, with $E_{\beta 1} = 625 \pm 5$ e.kv. (49%) and $E_{\beta 2} = 607 \pm 5$ e.kv. (33%), γ-ray Cm^{242} $E_\gamma = 42$ e.kv. Measurements with a proportional counter have shown that one mode of decay of Am^{242m} is electron capture; this decay amts. to about 18% and gives Pu^{242}. The transition $Am^{242m} \rightarrow Am^{242}$ is weak. The β-transition energy of Am^{242} to the excited level of Cm^{242} is $E_\beta = 580$ e.kv. A decay scheme for Am^{242m} has been plotted with Am^{242m} having a 0 spin; the spin of the ground state is 4 or 5. W. J.

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8

BARANOV, S. A.

4001-EML

2

4797

SMALL SIZE BETA SPECTROMETER. S. A. Baranov and R. M. Polevoi. Zhur. Tekh. Fiz. 25, 2535-6(1955) Dec. (In Russian)

A description is given of a small size beta spectrometer with a uniform field, focusing a first order electron beam in a direction perpendicular to the field. The spectrometer was used to identify radioactive isotopes from beta spectra. The electron and positron spectra up to 5 Mev were taken simultaneously on the spectrometer. The principle of construction is simple and the results are accurate. The weight of the magnet and chamber is 75 kg. The magnetic coils are supplied from 18 v. batteries with 15 amp. maximum. (R.V.J.)

EML

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8

USSR/Physical Chemistry - Nucleus of an Atom. B-2

Abs Jour : Referat Zhur - Khimiya, No 6, 25 March 1957, 18094

Author : Baranov, S.A. and Shlyagin, K.P.
Title : Enerby Levels of Pu^{238} and Pu^{239} nuclei.

Orig Pub : Atom. energiya, 1956, No 1, 52-65

Abstract : In order to study the dissocation of Np^{238}, Np^{239} and Cm^{242} a magnetic beta-spectrometer with double focussing and a luminescent gamma-spectrometer with NaI(Tl) were used. Samples were obtained following the reactions

$$Np^{237}(n,\gamma)Np^{238};\ U^{239}(n,\gamma)U^{239} \xrightarrow[23.5\ \text{min.}]{\beta^-} Np^{239}$$

and $Am^{241}(n,\gamma)Am^{242} \xrightarrow[16\ \text{hours}]{\beta^-} Cm^{242}$ with $T_{\frac{1}{2}}$ 162.5 days.
beta-spectrum

The measuring of beta-spectrum of Np^{238} revealed at

Card 1/2 - 2 -

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000103510012-8

USSR/Physical Chemistry - Nucleus of an Atom. B-2

Abs Jour : Referat Zhur - Khimiya, No 6, 25 March 1957, 18094

least five beta-transitions upon the excited levels of Pu^{238}. Bordering energies of these spectra are equal, respectively to: $E_{01} = (1236 \pm 5)$ electron-kilovolts; $E_{02} = (280 \pm 10)$ electron-kilovolts; $E_{03} = (250 \pm 10)$ electron-kilovolts. There is a reason to suppose that there exists a beta-spectrum with a bordering energy of 1139 electron-kilovolts. Seven gamma-transitions of the nucleus P^{238} are observed with energies 44,102,942,988,1030 and 1032 electron-kilovolts. Analysis of Curie's diagram permitted us to distinguish six partial beta-spectra Np^{239} with bordering energies (in electron-kilovolts): $E_{01} = 70$, $E_{02} = 327$, $E_{03} = 382$, $E_{04} = 439$, $E_{05} = 655$, $E_{06} = 723$. In gamma-spectrum lines with energies 68, 106, 210, 278 electron-kilovolts are the most intensive; the lines with energies 44, 49, 57, 61 electron-kilovolts are less intensive. Schematic diagrams of levels of Pu^{238} and Pu^{239} nuclei are built. Beta-spectrum Cm^{242} with $T_{1/2}$ of alpha-dissociation equal to 162.5 days was investigated.

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BARANOV, S. A.

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THE ELECTRON SPECTRUM OF U^{237}. S. A. Baranov and K. N. Shliagin. Soviet Phys. JETP 3, 200-5(1956) Sept. (In English). Zhur. Eksptl. i Teoret. Fiz. 30, 225-30(1956) Feb. (In Russian)

The electron spectrum of U^{237} was investigated on a $\pi\sqrt{2}$ focussing angle magnetic β spectrometer, beginning with electron energies of 1 kev. Two components of the spectrum were determined, with energy limits E_{OA} = 84 kev (26%) and E_{OB} = 249 kev (74%). The following γ transitions for N_p^{237} were computed from the conversion electron lines; 26; 33; 43; 60; 69(?); 101(?); 124(?); 165; 193(?); 208; 267; 331; 370 and 436 kev. A tentative decay scheme of U^{237} is given. (auth)

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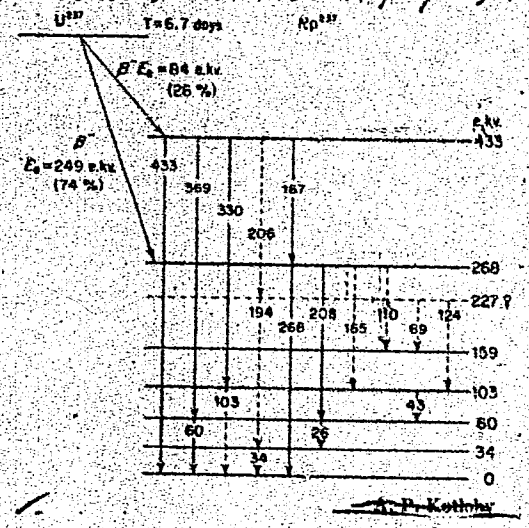
Baranov, S.A. and Shlyagin, K.N.



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BARANOV, S.A.

ASTHORS: Baranov, S.A. and Polevoy, R.M.

TITLE: A Method of Absolute Counting of Charged Particles (Metod Absolyutnogo scheta zaryazhennykh chastits)

PERIODICAL: Pribory i Tekhnika Eksperimenta, 1957, Nr 3, p. 132-[illegible] (USSR)

ABSTRACT: Absolute measurements of β-activity with standard and end-window counters of the T-Mo lead to various difficulties. These are: self absorption of the electrons by the source, absorption in the window of the end-window counter and in the air, back scattering of β particles from the support on which the source is deposited, and scattering in the source itself. In addition, it is necessary to know the decay scheme of the isotope under investigation and to correct for the solid angle. The calculation of the corrections for these effects is complicated and can lead to large errors. It is therefore desirable to calibrate the counters using sources whose absolute activity was determined with 4π-counters. A measurement on a given specimen using both an end-window counter and a 4π-counter yields the correction factor K via the simple formula $K = N_0/N_1$, where N_0 and N_1 are the number of β particles recorded

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A [illegible] of Absolute Counting of Charged Particles.

by the 4π-counter and the end-window counter respectively. For different radioactive isotopes the value of K must be determined separately. However, such a calibration is correct only for "weightless" specimens. In practice one has to determine the absolute activity of specimens having an appreciable weight. It follows that K depends not only on the limiting energy of the β spectrum of the given isotope but also on the form, position and weight of the source. The dependence of K on the weight of the specimen is shown in Fig.1 for Y^{90} and Sr^{90} in the range 0 to 45 mg. Investigations of this type are carried out using a calibrating 4π-counter shown in Fig.2. The counter consists of a hollow steel cylinder 40 mm in diameter and 40 mm high. The ends of it are covered by flat circular discs. At a distance of 0.[illegible] h (where h is the height of the cylinder) from the end pieces two parallel tungsten threads, 20 microns in diameter, are placed along the diameter of the tube. The threads are insulated from the steel tube. The tube is cut into two halves perpendicularly to its axis and a [illegible] the radioactive

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source is placed between them. A thin organic film is stretched over an aperture in the holder and the specimen is deposited on this film. The steel tube and the holder act as the cathode and the two threads as the anode. The working gas is methane at a pressure of 750 mmHg. 4 π-counters can be used in the Geiger, proportional and limited proportionality regions. A correction for the effect of the thickness of the source and the thin film is calculated, and is shown to be small. The counter can be used for absolute measurements on α-particles, β-particles and decay fragments. The efficiency is very nearly 100%. Using this counter it is possible to study β-active specimens with activities between 6 x 105 disintegrations per/min and 15 disintegrations per/min., the background being about 35 pulses per/min. The lower limit can be lowered by minimizing the effect of cosmic radiation using coincidence schemes. There are 4 diagrams, no tables and 11 references, of which 1 is Russian, 5 English, 1 French and 1 German.

SUBMITTED: September 22, 1956.

AVAILABLE: Library of Congress.

Card 3/3 1. Counters-Measurement 2. Particles-Counting 3. Isotope-Decay 4. Counters-Operation

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