

SOV/137-57-11-22591

Determination of the Heat Capacity of Metals (cont.)

surfaces which decrease the heat exchange due to radiation. S is made in the form of a cylinder with two cavities drilled in it (for the introduction of the thermocouple and for the insertion of a special device by means of which S is introduced into the heated F). After heating, S drops from the F cavity into the BC cavity which at that moment is placed under the F; the fitting together of the lids is done automatically. From this moment on and until the end of the experiment the recording of the temperature of BC is done at regular intervals, for which purpose the junctions of a differential copper-constantan thermo-rod, connected to an Ulitovskiy-type galvanometer are inserted into the BC. Three to five min later the pins in the BC holding the S are moved out a little and S is lowered into the water. It is not feasible to throw the heated S directly into water, because then the water boils, a part of it evaporates, and thus the heat balance is destroyed. At a certain moment the observations are terminated and the final value for the temperature of BC is recorded. The description of an experiment with LS59-grade brass is adduced, and an example is given of the calculation of the specific heat for that case. On the basis of an error analysis of this method the conclusion is made that in order to decrease the errors the temperature of the sphere at the moment of the termination of the experiment should be measured with special care. It is remarked that attempts to apply the
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Determination of the Heat Capacity of Metals (cont.)

- spherical BC method for testing heat insulators and liquids have yielded encouraging results.

L. G.

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137-58-5-11027

BEGUNKOVA, A. F.

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 5, p 305 (USSR)

AUTHOR: Begunkova, A. F.

TITLE: Experimental Determination of the Degree of Blackness of Austenite Steel (Eksperimental'noye opredeleniye stepeni chernoty listov austenitnoy stali)

PERIODICAL: V sb.: Issledovaniya v obl. teplovykh izmereniy i priborov. Leningrad, 1957, pp 146-160

ABSTRACT: The degree of blackness of the surface of sheets made of austenite steel was determined at temperatures ranging from 100 to 500°C. The apparatus employed consisted of two heavy steel plates with heating elements and a heating core installed between them; the metal sheets being tested were pressed against the core so that only a natural gap remained between them. The temperature of the core was measured with the aid of a Chromel-Alumel thermocouple and a sensitive galvanometer. Measurements and calculations of the coefficient of heat emission and degree of blackness were made for the following conditions: 1) the core alone, covered with a coating of lamp black; 2) sheets of austenitic steel with a normal external surface are

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Experimental Determination of (cont.)

pressed against the core; 3) same as in 2, only the sheets are covered with a layer of lamp black. From the data obtained by measurement, graphs are plotted by formulas derived theoretically for the method; the degree of blackness is determined as a function of temperature.

V. O.

1. Steel--Phase studies
2. Austenite--Properties

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30V/96-58-12-15/18

AUTHOR: Begunkova, A. E., Candidate of Technical Sciences

TITLE: Effect of Contact Thermal Resistances of Pellet Insulation (Vliyaniye kontaknykh teplovykh soprotivleniy dlya sfericheskoy izolatsii)

PERIODICAL: Teploenergetika, 1958, Nr 12, pp 85-86 (USSR)

ABSTRACT: It has recently been proposed to use spherical thermal insulation, that is, balls of aluminum foil, steel, lead and other materials. Recent work has shown that the heat-insulating properties of this kind of insulation are not very good, so it should be used only in cases of necessity. Tests were made on hollow spheres 8 - 9 mm diameter, of austenitic steel. Values of thermal conductivity are given. These steel spheres are only used when it is required to insulate structures of complicated shape at temperatures of the order of 500 - 650°C. For lower temperatures the spheres may be made of aluminum foil; these are much lighter and cheaper. Tests made with spheres of lead and glass surrounded by various fillers clearly showed that the heat transfer mainly depends on the nature of the filler and not on the material of which the spheres are made; the test results are recorded in Table 1. A defect of spherical insulation made of aluminum foil is that the spheres become distorted, increasing the area of contact between them. This greatly increases the rate of heat transfer. Results of tests on such insulation are given in Table 2, and have been used to

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Effect of Contact Thermal Resistances
of Pellet Insulation

SOV/96-58-12-15/18

construct graphs in Figs. 1. & 2. which show the relationship between the thermal conductivity of spherical insulation, the specific gravity of the material and the temperature. The marked increase in thermal conductivity that results from deformation of the spheres, renders this method of insulation unacceptable when deformation is likely to occur. Expressions are given for the coefficient of thermal conductivity of spherical insulation as a function of temperature for various specific gravities. The relationship between the temperature coefficient of thermal conductivity and the specific gravity of the material is plotted in Fig.3. There are 2 tables, 3 figures and 3 Soviet references.

ASSOCIATION: Leningrad Institute for Precision Mechanics and Optics
(Leningradskiy Institut Technoy Mekhaniki i Optiki)

Card 2/2

SOV/96-59-5-14/19

AUTHOR: Begunkova, A.F., Candidate of Technical Sciences
TITLE: Use of the Generalised Theory of Regular Thermal Conditions for Extrapolation of Temperature During Thermal-Physical Experiments (Primeneniye obobshchennoy teorii regulyarnogo teplovogo rezhima dlya ekstrapolyatsii temperatur pri teplofizicheskikh eksperimentakh)

PERIODICAL: Teploenergetika, 1959, Nr 5, pp 75-79 (USSR)

ABSTRACT: When determining steady temperatures at particular points of an object it is usually necessary to wait until a steady temperature field has been established in the body and this may take a very long time. During the whole of the determination it is necessary to maintain the experimental conditions constant. By using the generalised theory of regular conditions, limiting temperatures at different points in the body can be calculated from observations of temperature change with time without waiting for the final steady state to be established. Dul'nev and Kondrat'yev (Izvestiya Akademii Nauk, Otdeleniye Tekhnicheskikh Nauk, 1956, Nr 7) have shown that a certain time after starting to heat up a

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**Use of the Generalized Theory of Regular Thermal Conditions for
Extrapolation of Temperature During Thermal-Physical Experiments**

body, "regular" conditions set in for which the relations expressed by Eq (1) are valid. Consider a system of bodies with arbitrary distribution of energies and any values of heat transfer on the body surface: when a steady state is reached every point in the body will be at a definite temperature. The temperature will depend on the configuration, dimensions and thermal properties of the individual components of the system, on the distribution of heat sources in it and on the cooling conditions. If the heating process of the system is observed and rates of temperature change are measured at different points, the limiting steady temperatures at these points can be calculated by formula (2). If the surrounding medium is at constant temperature, the formula simplifies to Eq (3). Tests have shown that this method of determining steady temperatures can give an accuracy of 5 to 8%: the accuracy can be improved by measuring temperature changes over a number of time

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SOV/96-59-5-14/19

Use of the Generalised Theory of Regular Thermal Conditions for
Extrapolation of Temperature During Thermal-Physical Experiments

intervals and taking an average result. All the information required for the use of Eq (2) can be determined from a single test if, after a period of heating, the system is allowed to cool freely with the same external conditions as during heating. The general nature of the heating and cooling curve is seen in Fig 2. It is shown how a formula that is simpler though less accurate than expression (2) can be derived. The method greatly reduces the time required to carry out a number of thermal measurements such as determinations of thermal conductivity or temperatures in heaters, furnaces, boilers and so on. In order to check the applicability of the formulae when testing different materials in different equipment a number of tests were carried out. Various examples are quoted together with test results presented as tables and graphs. For all the cases considered the agreement between the calculated and measured final temperatures was good. For instance, Table 3 gives the results of tests on a number of

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materials with various instruments: thermal
conductivities determined by this method and by a
quasi-stationary method are compared and the agreement
is within 5 to 10%. There are 4 figures, 3 tables and
3 Soviet references.

**ASSOCIATION: Leningradskiy institut tochnoy mekhaniki i optiki
(Leningrad Institute of Precision Mechanics and Optics)**

Card 4/4

69799

28(5) 24.5200

S/146/59/002/06/012/016
D002/D006

AUTHOR: Begunkova, A.F., Candidate of Technical Sciences

TITLE: On a New Type of Flat Bicalorimeter ↑

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Priborostroyeniye, 1959, Nr 6, pp 78-88 (USSR)

ABSTRACT: Information is given on the G.M. Kondrat'yev method of determining mathematically the effective heat conduction coefficient necessary for testing plates consisting of separate elements, or devices consisting of separate components. This method can be used only for infinite plates, i.e. plates whose full thickness is 10:12 times less than their outer dimensions. In reality, such relationships are almost impossible. An attempt was made to use the above method together with the bicalorimeter method for limited systems. At the Kafedra teplofiziki LITMO (Chair of Thermo-

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S/146/59/002/06/012/016
D002/D006

On a New Type of Flat Bicalorimeter

-Physics of LITMO), the bicalorimeters "BK-P1", "Bb-1.1", "Bk-T1", and "Bk-P3" were produced, (Figure 7), having various relationships between the center and the thickness of the layer to be checked. Many materials were checked by means of these devices, the results being given in table 3, and the heat conduction coefficients were calculated. The article was recommended by the Kafedra teplovykh i kontrol'noizmeritel'nykh priborov (Chair of Heat and Checking-Measuring Devices). There are 5 graphs, 3 tables, 3 diagrams, and 2 Soviet references.

ASSOCIATION: Leningradskiy institut tochnoy mekhaniki i optiki
(Leningrad Institute of Precision Mechanics and Optics)

SUBMITTED: December 8, 1958

Card 2/2

24.5200 1537, 1427
1.3000 2208 only
17.4313

84324

S/170/60/003/009/020/020
B019/B060

AUTHOR: Begunkova, A. F.

TITLE: G. M. Kondrat'yev's Latest Research Within the Theory of Regular Heat Conditions 21.

PERIODICAL: Inzhenerno-fizicheskiy zhurnal, 1960, Vol. 3, No. 9, pp. 124-135

TEXT: In the first part of the present paper the author discusses a new variant of the two-point method, based on the regular heat conditions of a symmetrical three-layered plate (Fig. 1). A survey is first made of fundamental formulas, by starting from eigenfunction $U = \cos(\mu x + \omega)(1)$, which is characteristic of the thermal conditions of a three-layered plate, between whose individual layers there is a heat-insulating material. Formula (6) is obtained for the quantity b characterizing the nonuniformity of the temperature field: $b = \cos(s) - Gs \cdot \sin(s)$, where $s = \mu \delta$, $\mu = \sqrt{m/a}$, with a denoting the thermal diffusivity and m the regular cooling rate. $G = C'/C$, where C' is the thermal capacity of the medium layer and C the thermal capacity of the two outer layers. The concept inherent
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G. M. Kondrat'yev's Latest Research Within
the Theory of Regular Heat Conditions

84324

S/170/60/003/009/020/020
B019/B060

in the new two-point method of determining the heat-transfer resistivity is discussed next. Pertinent formulas are set up, and the experimental arrangement shown in Fig. 2 is discussed. The latter consists of a metallic container made of equally thick plates, whose thermal capacity is well known. The same holds for the core placed in the center. The material, whose heat-transfer resistivity is to be determined, is placed between core and container. As the system is cooled, the temperature of core and container is measured with differential thermocouples, and the heat-transfer resistivity can then be determined with the aid of the theory developed here. The second part of the present paper deals with the theory of regular cooling of a flat bicalorimeter. The theory of the heat conditions of a three-layered plate, developed in the first part, is used for the purpose, and formulas are derived for determining the total thermal capacities of each of the three plates. Finally, the application of this theory to the determination of the thermal capacity of a liquid with a flat bicalorimeter is discussed. There are 3 figures and 2 Soviet references.

ASSOCIATION: Institut tochnoy mekhaniki i optiki, g. Leningrad
(Institute of Fine Mechanics and Optics, Leningrad)

Card 2/2

S/170/62/005/004/013/016
B104/B102

AUTHORS: Begunkova, A. F., Dul'nev, G. N., Platunov, Ye. S.,
Semyashkin, E. M., Cherkasov, V. N., Yaryshev, N. A.

TITLE: Normal thermal conditions of bodies of complex shape

PERIODICAL: Inzhenerno-fizicheskiy zhurnal. v. 5, no. 4, 1962,
122 - 126

TEXT: In the "Inzhenerno-fizicheskiy zhurnal", no. 8, 1961, a paper by G. N. Tret'yachenko and L. V. Kravchuk entitled "Normal thermal conditions of complex bodies" was published. In this paper, some "fundamental errors" of the founder of the theory of normal thermal conditons, G. M. Kondrat'yev and his followers, are pointed out. In the present paper, some assumptions of the theory set up by Kondrat'yev are explained, and it is shown that the authors of the paper mentioned misunderstood the term "normal thermal conditions". This is discussed in detail by citing the corresponding passages of the text and by using the symbols introduced there. There are 8 Soviet references.

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Normal thermal conditions of bodies...

S/170/62/005/004/013/016
B104/B102

ASSOCIATION: Institut tochnoy mekhaniki i optiki, g. Leningrad
(Institute of Precision Mechanics and Optics,
Leningrad)

SUBMITTED: November 3, 1961

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S/862/62/001/000/001/012
E032/E314

AUTHORS: Begunkova, A.F., Dul'nev, G.N. and Platunov, Ye.S.

TITLE: Instruments developed at LITMO for thermophysical measurements

SOURCE: Teplo- i massoperenos. t. 1: Teplofizicheskiye kharakteristiki materialov i metody ikh opredeleniya. Ed. by A. V. Lykov and B. F. Smol'skiy. Minsk, Izd-vo AN BSSR, 1962. 3 - 10

TEXT: Instruments and apparatus developed between 1953 and 1960 at the Leningrad Institute for Precision Mechanics and Optics are reviewed. The first group of instruments is designed for thermophysical measurements on thermally insulating and constructional materials at room temperatures. They are based on the regular temperature variation methods developed by Professor G.M. Kondrat'yev (Teplovyye izmereniya (Thermal measurements), Mashgiz, 1957). The second group includes apparatus also based on Kondrat'yev's theories and used in rapid determinations of the temperature-dependence of various thermophysical characteristics of materials between -100 and 1 100 °C. Only very general descriptions are
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Instruments developed

S/862/62/001/000/001/012
E032/E314

given; detailed accounts are available in previously published papers. The present review is based on 13 Soviet papers, published between 1954 and 1962. There are 5 figures.

ASSOCIATION: Leningradskiy institut mochnoy mekhaniki i optiki
(Leningrad Institute of Precision Mechanics and Optics) ✓

Card 2/2

BEGUNKOVA, A. F.

Alpha-calorimeters with open surfaces. Izv. vys. ucheb. zav.;
prib. 6 no.2:137-146 '63. (MIRA 16:4)

1. Leningradskiy institut tochnoy mekhaniki i optiki. Rekomendovana kafedroy teplovykh i kontrol'no-izmeritel'nykh priborov.

(Calorimeters)

NIKISHINA, Mariya Filippovna; EVENTOV, Iosif Markovich; ARKHIPOVA,
Aleksandra Pavlovna; BEGINKOVA, Ninel' Ivanovna; BORODINA,
Lyubov' Alekseyevna; IGON'KINA, Galina Sergeevna;
NAZAROV, Vladimir Vladimirovich; ALEKSEYEV, A.P., red.

[Emulsions used in road construction] Dorozhnye emul'sii.
[By] M.F.Nikishina i dr. Moskva, Transport, 1964. 171 p.
(MIRA 17:12)

NIKISHINA, M.F.; KREMNEV, L.Ya.; BORODINA, L.A.; ARKHIPOVA, A.P.; BEGUMKOVA,
N.I.

Bituminous and tar emulsions used in road construction. Avt.dor.
21 no.11:25-27 N '58. (MIRA 11:12)
(Road materilas)

NIKISHINA, M.P.; BEGUNKOVA, N.I.

Peculiarities of using bituminous emulsions. Avt.dor. 26 no.10:
21-22 0 '63. (MIRA 16:11)

BEGUNOV, A.I.; SKOBEYEV, I.K.

Load distribution in contact pins during the baking of aluminum
electrolytic cells by overhead current application. TSvet.met. 38
no.3:53-60 Mr '65. (MIRA 18:6)

BEGUNOV, A.I.

Causes of electrolytic cell bottom deterioration during the
operation of aluminum baths. TSvet. met. 38 no.6:54-61 Je '65.
(MIRA 18:10)

BEGUNCV, B. N.

Influence of mirrors of stereoscopic lenses on the exactness of photogrammetric measurements
25506. Vliyaniye Zerkal Stereopriborov Na Tochnost' Fotogrammetricheskikh Izmereniy. Sbornik Nauch.--Tekhn. I Proizvod. Statey Po Geodezii, Kartografii, Topografii, Aeros''yemke I Gravimetrii, VYP. 23, 1949, s. 16-21

SO: Letopis' Zhurnal'nykh Statey, Vol. 34, Moskva, 1949

BEGUNOV, Boris Nikolayevich; VERES, L.F., red.; LAZAREVA, L.V., tekhn.
red.

[Geometrical optics] Geometricheskaja optika. Moskva, Izd-vo
Mosk. univ., 1961. 260 p. (MIRA 15:2)
(Optics, Geometrical)

BEGUNOV, B.N., kand.tekhn.nauk

Transformation of optical images. [Trudy] MVTU no.102:77-
132 '61. (MIRA 14:8)

(Optics)

BEGUNOV, B.N., kand.tekhn.nauk

Modern pancratic systems. [Trudy] MVTU no.110:40-59 '62.

(MIRA 16:6)

(Optical instruments)

BARDIN, Anatoliy Nikolayevich; MOZES, Ye.N., retsenzent; ~~BEGINOV~~
B.N., retsenzent; KHRUSTALEVA, N.I., red.; GRIGORCHUK,
L.A., tekhn. red.

[Technology of optical glass manufacture] Tekhnologiya opti-
cheskogo stekla. Izd.3., perer. i dop. Moskva, Vysshaya
shkola, 1963. 518 p. (MIRA 16:12)
(Glass, Optical)

BEGUNOV, Boris Nikolayevich; SABASHNIKOVA, Ye.S., ref.

[Transformation of optical images] Transformirovanie
opticheskikh izobrazhenii. Moskva, Iskusstvo, 1965.
230 p. (MYRA 12:1)

BERGUNOV, G.A.; GORBACHEV, S.V.

Electrochemical processes on an alternately polarized electrode.
Part 1: Description of the unit and general instructions.
Zhur.fiz.khim. 35 no.11:2636-2638 N '61. (MIRA 14:12)

1. Moskovskiy khimiko-tekhnologicheskii institut imeni D.I.
Mendeleyeva.

(Electrochemistry)

BEGUNOV, G.A.; GORBACHEV, S.V.

Electrochemical processes on an alternating polarizing
electrode. Part 4. Zhur. fiz. khim. 38 no.3:785-788 Mr '64.
(MIRA 17:7)

1. Moskovskiy khimiko-tekhnologicheskij institut imeni D.I.
Mendeleeva.

BEGUNOV, G.A.; GORBACHEV, S.V.

Electrochemical processes on an alternating-polarizing electrode.
Part 2. Zhur. fiz. khim. 36 no.9:2062-2066 S '62.

(MIRA 17:6)

1. Khimiko-tehnologicheskij institut imeni D.I. Mendelejeva.

BEDA, E., inzh.; PETERSON, A., inzh.; BEGUNOV, I.; KALENT'YEV, V., inzh.;
PRIKHOD'KO, V., inzh.; CHERTKOV, V., inzh.; KOLOMYICHENKO, V.,
inzh.; BIKEYEV, V., inzh.; KOGUYENKO, B.

Exchange of experience. Avt. transp. 43 no.1:49-54 Ja '65.
(MIRA 18:3)

BEGUNOV, O.G.

Water supply of heat engines at peat works. Sbor.nauch.trud.
Bel.politekh.inst. no.65:53-63 '59. (MIRA 13:5)
(Peat industry) (Water--Purification)

ACC NR 18447/78

SOURCE CODE: 01/0113/05/005/013/0110/1878

INVENTORS: Odiy-Aliyev, T. K.; Konstantinov, V. I.; Sarkisov, Yu. K.; Antonov, A. A.; Degunov, P. A.

ORG: none

TITLE: An automatic compensation refractometer. Class 42, No. 184479

SOURCE: Izobret prom obraz tov zn, no. 15, 1966, 90

TOPIC TAGS: refractometer; optic measurement, measuring instrument, automatic control design

ABSTRACT: This Author Certificate presents an automatic compensation refractometer with a differential photoreceiver, an optical compensator, and a cell (see Fig. 1). The design increases the precision of the measurement. The compensator in the refractometer is a lens compensator, consisting of an objective lens, two negative lenses, and a positive lens which moves in a plane perpendicular to the optical axis

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UDC: 535.322.4

Z. 18004-57

ACC NR: AP6029938

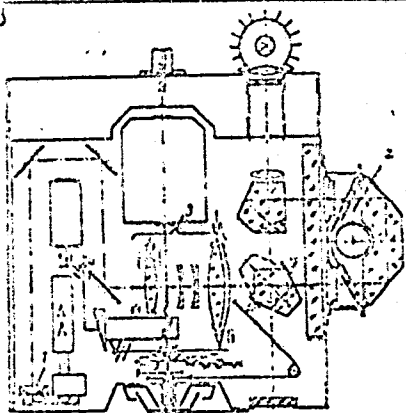


Fig. 1. 1 - photoreceiver;
2 - coll; 3 - compensator

of the compensator. Orig. art. has: 1 figura.

SUB CODE: 14, 20/

SUBM DATE: 26Apr65

Card 2/2

BEGUNOV, V.

26429 Molochnyy kombinat stolitsy. Moloch. Prom-st', 1949, No. 8 s. 28-33.

SO: LETOPIS' NO. 35, 1949

BEGUNOV, V.

Better guidance for socialist competition among collectives.
Moloch. prom. 17 no.6: 21 '56. (MLRA 9:10)

(Dairy industry)

BEKUNOV, V.A.

"Device for measuring the motion of the traverse of the oil circuit
breakers model VM-35, VM-25, and VM-35"
Rab energ, 2, no. 1, 1952.

SKOKAN, I.G.; BEGUNOV, V.L., redaktor; TARASENKO, Z.K., tekhnicheskiy redaktor

[Repair and assembling of equipment at meat combines] Remont i montazh oborudovaniia na miasokombinatakh. Moskva, Pishchepromisdat, 1951. 212 p. (MIRA 9:3)

(Meat industry)

INIKHOV, G.S., zasl. deyatel' nauki i tekhniki, doktor khim. nauk, prof.; SKORODUMOVA, A.M., kand. biol. nauk; SHAPIRO, L.R. [deceased]; MILYUTINA, L.A., inzh.; DEMUROV, M.G., kand. sel'khoz. nauk; LEBEDEVA, K.S., kand. sel'khoz. nauk; KYURKCHAN, V.N.; VASILEVSKIY, V.G., inzh.; SAVINOVSKIY, N.G., kand. tekhn. nauk; VEDRASHKO, V.F., kand. med. nauk; SOKOLOVSKIY, V.P., prof.; ~~BEGUNOV, V.L., inzh.~~; KAZENNOVA, A.R.; VEDRASHKO, V.F., kand. med. nauk; KOSTYGOV, V.V., red.; SKURIKHIN, M.A., MOLCHANOVA, O.P., doktor biol. nauk, prof.; SPERANSKIY, G.N., zasl. deyatel' nauki, doktor med. nauk, prof.; KISINA, Yo.I., tekhn. red.

[Dairy foods] Molochnaia pishcha. Moskva, Pishchepromizdat, 1962. 419 p. (MIRA 15:10)

1. Glavnyy kulinar Ministerstva trgovli RSFSR (for Kazennova).
2. Chlen-korrespondent Akademii meditsinskikh nauk SSSR (for Speranskiy, Skurikhin).
3. Deyatvitel'nyy chlen Akademii meditsinskikh nauk SSSR (for Molchanova).

(Cookery (Dairy products)) (Dairy products)

SOV/30-59-4-32/51

30(4), 30(6)
AUTHOR:

Begunov, Yu. K.

TITLE:

Archeographic Expeditions by the Pushkin House (Arkhograficheskiye ekspeditsii Pushkinskogo Doma)

PERIODICAL:

Vestnik Akademii nauk SSSR, 1959, Nr 4, p 115 (USSR)

ABSTRACT:

The Department of Old Russian Literature of the Institut russkoy literatury (Pushkinskiy Dom) Akademii nauk SSSR (Institute of Russian Literature (Pushkin House) of the Academy of Sciences of the USSR) carries out a systematic search for and collection of Old Russian manuscripts. Under the direction of V. I. Malyshev the expeditions investigated many regions of the Komi- and Karel'skaya ASSR, of the Arkhangel'skaya, Moskovskaya and Gor'kovskaya oblast' as well as of the Baltic Republics. Between 1945 and 1958 they collected more than 1000 manuscripts, among them unique specimen of Old Russian literature. In 1958 4 expeditions of the Institute visited more than 60 settlements along the rivers Pechora, Mezen' and Guslitsa (Moskovskaya oblast') and on the western shore of the Lake Chudskoye, and acquired more than 170 manuscripts from the 15th up to the 18th century. The manuscripts contain valuable

Card 1/2

BEGUNOVA, I.I., red.; BRUSILOVSKIY, Ye.S., dots., red.; DASHTYANTS,
G.A., prof., red.; POLISHCHUK, I.A., prof., red.; UMOVIST, M.N.,
dots., red.; FEDOROV, I.I., prof., red. ~~DASHTYANTS, Ye.S., red.~~
~~BRUSILOVSKIY, Ye.S., red.~~

[Allergy problems in clinical practice] Voprosy allergii v
klinike. Kiev, osmedizdat USSR, 1963. 221 p.

(MIRA 18:9)

1. Kiyevskiy Gosudarstvennyy institut usovershenstvovaniya vra-
chey. 2. Glavnyy vrach Gorodskoy klinicheskoy bol'nitsy Shev-
chenskogo rayona goroda Kiyeva (for Begunova). 3. Kiyevskiy
Gosudarstvennyy institut usovershenstvovaniya vrachey (for
Polishchuk, Umovist).

BEGUNOVA, N. D.

✓ The accumulation of coloring substances during the period of ripening of grapes. R. D. Begunova. *Trudy Vsesoyuz. Nauch. Issledovatel. Inst. Vinogradarstva i Vinogradarstva, "Magarach" 4, 106-74(1953); Referat, Zhur. Khim., Biol. Khim. 1955, No. 821E.*—Emin increases in the flesh and emodin in the skin of grapes as the fruit ripens. Both diminish in overripened fruits. B. S. Levine

BEGUNOVA, R. D.

Chemical Abst.
Vol. 48 No. 3
Feb. 10, 1954
Biological Chemistry

③
Changes in the coloring substances of grapes during ripening and pressing. V. I. Nilov and R. D. Begunova (Inst. Viticulture, Yalta). *Riokhimiya* 18, 275-8(1953).
During the pressing process of colored grapes the glucocnidin diffuses out of the skin into the freed juice and becomes quantitatively converted into the glucoside enin. The synthesis of enin from enidin and glucose is the result of a fermentation process brought about by the action of glucosidase. This process can be inhibited by the addn. of HgCl₂, AgNO₃, NaF, etc., in which case the enitin remains in its original state.
B. S. Levine

B. GUNOVA, R. D.

"The Dynamics of the Pigment Substances of the Grape During Its Maturation and Processing." Cand Biol Sci, Moscow Agricultural Acad, Moscow, 1954.
(RZhBiol, No 7, Dec 54)

Survey of Scientific and Technical Dissertations Defended at USSR
Higher Educational Institutions (12)
SO: Sum. No. 556, 24 Jun 55

... of color substance in red grapes and 2

has a

USSR / Chemical Technology. Chemical Products and Their Application. I-29
Application. Fermentation Industry.

Abs Jour : Ref Zhur - Khimiya, No 3, 1957, No 10243

Author : Begunova, R.D. and Zakharina, O.S., and Chalenko, D.K.

Inst : Not given

Title : The Removal of Iron from Wine with the Aid of Ion-Exchange Resins.

Orig Pub : Vinodeliye i vinogradarstvo SSSR, 1956, No 4, 14-16

Abstract : Experiments have been carried out in which fruit and berry wines (fortified cider, fortified white wine) and grape wines were treated with KU-1 and SBS cation-exchange resins and ED-10 anion-exchange resins for the removal of the dissolved iron. It has been established that the iron is present in the above-indicated wines (with the exception of Sil'vaner wine) in the form of complex compounds, and hence is not removed by cation-exchange resins; however, nearly

Card : 1/2

USSR / Chemical Technology. Chemical Products and Their
Application. Fermentation Industry.

I-29

Abs Jour : Ref Zhur - Khimiya, No 3, 1957, No 10243

Abstract : complete removal is achieved with a type EDS-10 anion-exchange resin which has been treated with citric acid anion. After ion exchange the treated wines compare well with the control specimens and in a number of cases are of superior quality. A certain reduction in acidity is observed after ion exchange. Better results were obtained when the wines were treated in batches with doses of 6.5-7 gms per liter of EDE-10 anion-exchange resins; contact times of 3-4 hours were used with constant shaking.

Card : 2/2

BEGUNOVA, Roza Davidovna, kand. biol. nauk, ZAKHARINA, O.S., kand. biol. nauk,;
NABAL'YANTS, G.G., prof., doktor sel'skokhozyaystvennykh nauk,
retsensent.; NILOV, V.I., prof., doktor khim. nauk, spetsredaktor,;
MASLOVA, Ye.F., red.; DOBUZHINSKAYA, L.V., tekhn. red.

[Chemical control in the process of making wine from fruits and
berries] Tekhnokhimicheskii kontrol' plodovo-lagodnogo vinodeliia.
Moskva, Pishchepromizdat, 1958. 141 p. (MIRA 11:11)
(Fruit wines)

BEGUNOVA, Roka Davidovna; ZAKHARINA, Ol'ga Solomonovna; ZARUBIN, Vasilii
Andreyevich; PAVLOV-GRISHIN, Sergey Ivanovich; CHALENKO, Dmitriy
Kalinovich; FEDOROVICH, Aleksandr Georgiyevich; GERASIMOV, M.A.,
retsensent; BUYEVKROVA, Ye.M., spetsred.; KOVALEVSKAYA, A.I., red.;
GOTLIB, M.M., tekhn.red.

[Technology and chemical control of grape, fruit, and berry wines]
Tekhnologiya i tekhnokhimicheskii kontrol' vinogradnykh i plodove-
iagodnykh vin. Moskva, Pishchepromizdat, 1959. 460 p.

(MIRA 13:3)

(Wine and wine making)

BEGUNOVA, R.D.; POPOVA, Ye.Ye.; KULESHOVA, Ye.S.

Studying the possibility of wine clarification by means of domestic diatomites and tripoli. Trudy Tsentra.nauch.-issl. inst.piv., bezalk. i vin.prom.no.11:66-70 '63. (MIRA 17:9)

Begunova, T. G.

AUTHOR: Begunova, T.G. (Engineer-economist). 136-7-4/22

TITLE: On the economic expediency of autoclave processes at Ural and Kola-Peninsula Nickel Works. (Ob ekonomicheskoy tselesoobraznosti avtoklavnykh protsessov na nikelovykh zavodakh Urala i Kol'skogo Poluostrova).

PERIODICAL: "Tsvetnyye Metally"
1957, No.7, pp.14-22 (USSR).

ABSTRACT: In this article some economic aspects of the economics of autoclave processes relative to six forms of metal-containing materials met with in the nickel-cobalt industry are discussed. Because of limited cost information on autoclave processes many of the cost calculations are approximate or even debatable (especially as regards capital costs) but they provide an indication of useful lines for research and industrial-scale experimentation. The calculations are based mainly on estimates made by the high-pressure laboratory of the Gipronikel' Institute and apply to the following materials: the nickel and cobalt mattes and cobalt-containing mass at the Yuzhuralnikel' combine; the nickel concentrate obtained by flotation of converter-matte and the copper-nickel ore concentrate of the Severonikel' combine; the cobalt raw material of the

1/2

136-7-4/22

On the economic expediency of autoclave processes at Ural and Kola-Peninsular Nickel Works. (Cont.)

Ufaleysk works. The technical-economic parameters for the treatment of these materials by autoclave and by the most progressive non-autoclave methods are compared. Flow-sheets for the various processes are given and costs tabulated. The parameters of the autoclave methods are superior and these methods also have indirect advantages. The greatest reduction of direct working costs from the introduction of autoclave methods is obtained in the treatment of cobalt-rich intermediate products. It is suggested that autoclave methods appear so promising that further research on ways of reducing materials consumption and on new, more efficient methods of selective precipitation would be justified.

2/2

There are 3 figures and 6 tables.

AVAILABLE: Library of Congress

SOV/137-58-7-14568

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 7, p 89 (USSR)

AUTHORS: Begunova, T.G., Pervushin, S.A.

TITLE: The Major Areas in Which Nickel Cost May be Reduced (Based on the Example of Establishments on the Kola Peninsula)
[Vazhneyshiy rezerv snizheniya sebestoimosti nikelya (na primere predpriyatiy Kol'skogo poluoostrova)]

PERIODICAL: Sb. nauchn. tr. Mosk. in-t tsvetn. met. i zolota, 1957, Nr 27, pp 248-257

ABSTRACT: In 5 years (1950-1955), the cost (C) of matte (M) has been cut by 9.3% at the Pechenganikel' Kombinat, chiefly by increasing the power of the electric furnaces from 12 to 21 megawatts by rebuilding the furnace transformers and changing the furnace design, thus increasing output rate to more than double and cutting unit consumption of energy by 19%. The output of M rose 35%. During that period, the C of Ni was cut 21.8% at the Severonikel' Kombinat by increasing recovery of Ni by 8.5%, Cu by 17.3%, and Co by 18.3% by cutting unit consumption of materials, fuel, and electrical energy, increasing labor productivity by 37.5%, and increasing the output of electrolytic Ni

Card 1/2

SOV/137-58-7-14568

The Major Areas in Which Nickel Cost May be Reduced (cont.)

by 43.8%. Measures for further C reduction are examined, including: increase in the proportion of concentrates in the melt charge, reduction in transportation costs, utilization of S from the waste gases of metallurgical plants, utilization of tailing slags for the production of building materials, replacement of shaft-furnace smelting by electrical smelting (cutting conversion costs as much as ~ 48% per t metal and increasing recovery as follows: Ni from 87 to 96%, Cu from 88 to 96%, and Co from 63 to 80%), increase in the power of the electric furnaces, improvement in the preparation of the charge, separate electric reduction smelting of converter slags to extract Co from them, and introduction of M separation by flotation instead of melting (which should cut the C of conversion to 86.7% per t M). The carbonyl process and autoclave treatment of the Ni concentrate obtained by flotation of the M offer good prospects.

Ye.Z.

1. Nickel industry--Costs
 2. Nickel--Production
 3. Industrial equipment
- Performance

Card 2/2

BEGUNOVA, T.I.

Parathyroprivic tetany and myxedema following laryngectomy with the removal of the thyroid and parathyroid glands. Zhur. ush., nos. i gorl. bol. 20 no. 3:70-71 My-Je '60. (MIRA 14:4)

1. Iz kliniki bolezney ukha, gorla i nosa (zav. - zasluzhenny deyatel' nauki prof. A.I. Kolomychenko) Kiyevskogo instituta usovershenstvovaniya vrachey.

(LARYNX--SURGERY) (THYROID GLAND--SURGERY)

(PARATHYROID GLANDS--SURGERY) (TETANY) (MYXEDEMA)

BEGUNOVA, T.I.

Rare localization of a specifically myeloid infiltration of the laryngeal and tracheal walls in chronic myelosis. Zhur, ush., nos. i gorl. bol. 20 no.6:79-80 N-D '60. (MIRA 15:2)

1. Iz otdela klinicheskoy gematologii (zav. - prof. D.N.Yanovskiy) Ukrainskogo instituta klinicheskoy meditsiny imeni akademika N.D. Strazhesko.

(LEUKEMIA)

(LARYNX...DISEASES)

BEGUNOVA, T.I.

Changes in the arterial pressure and pulse of hypertensives following tonsillectomy. Zhur. ush., nos. i gorl.bol.22 no.1:28-33 Ja-F '62.
(MIRA 15:5)

1. Iz Otorinolaringologicheskogo otdeleniya (zav. - starshiy nauchnyy sotrudnik V.A.Gorchakov) i otdela funktsional'noy diagnostiki (zav. - starshiy nauchnyy sotrudnik Ye.M.Liozina) Ukrainskogo nauchno-issledovatel'skogo instituta klinicheskoy meditsiny imeni akademika N.D.Strazhesko.

(BLOOD PRESSURE) (PULSE) (TONSILS--SURGERY)

BEGUNOVA, T.I.

Electrocardiographic data in hypertension and chronic tonsillitis before and after tonsillectomy. Zhur. ush., nos. 1 gorl. bol. 23 no.5:26-28 S-0'63 (MIRA 17:3)

1. Iz Ukrainського instituta klinicheskoy meditsiny imeni akademika N.D.Strazhesko (nauchnyy rukovoditel' - zaslushennyy deyatel' nauki prof. A.L.Mikhnev i zaslushennyy deyatel' nauki prof. A.I.Kolomyichenko).

BEGUNOVA, T.I.

Tonsillectomy in hypertension. Zhur. ush., nos. 1 gorl.
bol. 23 no.1:41-45 Ja-F '63. (MIRA 17:2)

1. Iz Ukrainskogo nauchno-issledovatel'skogo instituta klinicheskoy meditsiny imeni akademika N.D. Strazhesko; nauchnyy rukovoditeli: zaslushennyy deyatel' nauki prof. A.L. Mikhnev (Institut klinicheskoy meditsiny) i zaslushennyy deyatel' nauki prof. A.I. Kolomychenko (Institut otolaringologii Ministerstva zdravookhraneniya UkrSSR).

BEGUNOVA, T.I.

Case of agranulocytosis with the development of laryngeal
stenosis. Zhur. ush., nos. 1 gor. bol. 24 no.1:87-88 Ja-F '64.
(MIRA 18:3)

1. Iz otdela klinicheskoy gematologii (zav.- prof. D.N. Yanovskiy)
i otorinolaringologicheskogo otdeleniya (zav.- starshiy nauchnyy
sotrudnik V.A. Gorchakov) Ukrainского instituta klinicheskoy
meditsiny imeni akademika N.D. Strazhesko.

SOV/137-58-11-23042

Translation from: Referativnyy zhurnal. Metallurgiya, 1958, Nr 11, p 173 (USSR)

AUTHORS: Avdeyeva, A. V., Sokolovskiy, A. L., Tsyganova, P. A., Begunova, T. N.

TITLE: Investigation of Corrosion Resistance of Metals in Aggressive Media of Caramel Production (Issledovaniye korroziynoy stoykosti metallov v agressivnykh sredakh karamel'nogo proizvodstva)

PERIODICAL: Khlebopek. i konditersk. prom-st', 1958, Nr 2, pp 14-15

ABSTRACT: A study was made of the corrosion of Zh-17-T and Ya-1-T steels, Al, Cu, and St3 steel in a caramel mass, caramel filling (1 part apple puree + 1 part sugar) and in boiled apple, apricot, and damson-plum purees. Zh-17-T and Ya-1-T steels are resistant in all three media, Al is resistant in the caramel medium, Cu in the caramel filling and in the boiled purees. The addition of 1% citric and 1% lactic acids to the caramel mass and filling does not increase corrosion. The addition into the boiled puree of 2% [a line must have been skipped in the Russian original. Trans. Note]Cu. Upon the addition of 2% trioxylglutaric acid to the apricot puree all metals are corroded. Tests under shop conditions showed a good resistance

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SOV/137-58-11-23042

Investigation of Corrosion Resistance of Metals in Aggressive Media (cont.)

of Zh-17-T and Ya-1-T steels in the filling vacuum apparatus. Only Ya-1-T steel is resistant in the storage tank for puree treated with SO_2 , and it can also be recommended for the manufacture of the condenser of the water-jet air pump where SO_2 of various concentrations may always be present.

T. A.

Card 2/2

BEGUNOVSKAYA, L. M.

USSR/Chemical Technology. Chemical Products and I-22
Their Application--Crude rubbers, natural and
synthetic. Vulcanized rubber

Abs Jour: Ref Zhur-Khimiya, No 3, 1957, 9785

Author : Begunovskaya, L. M., Zhakova, V. G., Karmin, B. K.,
and Epshteyn, V. G.

Inst : Not given

Title : Aging and Fatigue of Rubbers Vulcanized in the
Presence of Various Accelerators and Antioxidants

Orig Pub: Sb.: Starenie i utomleniye kauchukov i rezin i
povysheniye ikh stoykosti [Symposium on the Aging
and Fatigue of Rubbers and the Improvement of
their Aging Resistance], Leningrad, Goskhimizdat,
1955, 31-52

Abstract: Phenyl- β -naphthylamine (I) and 2,4-diaminodiph-
enylamine (II) retard the oxidation of natural
rubber by molecular O₂. The addition of I acceler-
ates the destruction of the rubber during low-tem-
perature mechanical plastization, with resultant

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USSR/Chemical Technology, Chemical Products and I-22
Their Application--Crude rubbers, natural and
synthetic. Vulcanized rubber

Abs Jour: Ref Zhur-Khimiya, No 3, 1957, 9785

Abstract: izates containing II than in vulcanizates contain-
ing I). The effect of I and II on the fatigue of
rubbers during deformation tests in which equal
amounts of energy are stored in the rubbers was
found to be equal. II is more active in the
fatigue of unfilled vulcanizates from SKB rubber.
The resistance to aging of vulcanizates prepared
from natural rubber increases as the amount of
accelerator is increased and the amount of S is
decreased. The resistance to aging depends on the
duration of vulcanization. Revulcanization of the
mixture with Captax leads to a sharp decrease in
aging resistance; this effect is not observed in
rubbers containing thioram and DPG. In the presence
of an accelerator the degree of homogeneity of
the molecular structure of the vulcanizates is in-

Card 3/4

BEGUNOVSKAYA, L.M.; KARMIN, B.K.

Structure and properties of soft thermoplastic materials made from
stiff butadiene-styrene rubbers. Kauch. 1 rez. 16 no.12:7-11 D '57.
(MIRA 11:3)

1. Nauchno-issledovatel'skiy institut shimnoy promyshlennosti.
(Plastics) (Rubber, Synthetic)

BEGUNOVSKAYA, L. M., Cand Tech Sci -- (diss) "Research into the structure and properties of soft and thermoplastics of rigid divinyl-styrole rubbers." Moscow, 1960. 12 pp; (Ministry of Higher and Secondary Specialist Education RSFSR, Moscow Inst of Fine Chemical Technology im M. V. Lomonosov); 150 copies; price not given; (KL, 28-60, 160)

BORISEVICH, Ye.S., prof.; BEGUSHIN, G.K.

Seismic electrographic oscillograph of the H-001 (SEO) type.
Trudy Inst. fiz. Zem. no.35:65-69 '64.

(MIRA 17:12)

L 62266-65 EMT(m) Feb DIAAP

ACCESSION NR: AP5011675

LR/0166/65/000/002/0067/0071

AUTHORS: Begzhanov, R. B.; Islamov, A. A.

TITLE: Resonant scattering of gamma quanta by Ce-140 nuclei

SOURCE: AN UzSSR. Izvestiya. Seriya fiziko-matematicheskikh nauk.
no. 2, 1965, 67-71

TOPIC TAGS: cerium, Gamma scattering, resonant scattering, excited
state, level lifetime

ABSTRACT: Because of some contradictions in the previously reported values of the lifetime of the 1597 keV first excited state of Ce^{140} , the authors used as a source Ia^{140} (40 hours lifetime) and the method of self-absorption of resonant radiation. The sources, in liquid and in solid form, were exposed to a beam of 1.8×10^{13} neutrons/cm²sec from the reactor of Institut yadernoy fiziki (Institute of Nuclear Physics) AN UzSSR. The source activity at the start of the

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L 52-05-65

ACCESSION NR: AP5011675

measurement was 300 mCu for the solid source and 200 mCu for the liquid source. The experimental set-up is shown in Fig. 1 of the Enclosure. The value of the lifetime was determined from the decrease in the effect produced by a resonant absorber placed between the source and the scatterer. The value obtained was $(2.15 \pm 0.80) \times 10^{13}$ sec, which is in good agreement with data obtained elsewhere by the Coulomb excitation method, and also with the empirical formula given by L. Grodzins (Phy. Lett. v. 2, 88, 1962). Original article has: 3 figures and 1 formula

ASSOCIATION: Institut yadernoy fiziki AN UzSSR (Institute of Nuclear Physics, AN UzSSR)

SUBMITTED: 02Mar64

ENCL: 01

SUB CODE: NP

NR REF SC7: 003

OTHER: 005

Card 2/3

L 62205-65

ACCESSION NR: AP5011675

ENCLOSURE: 01

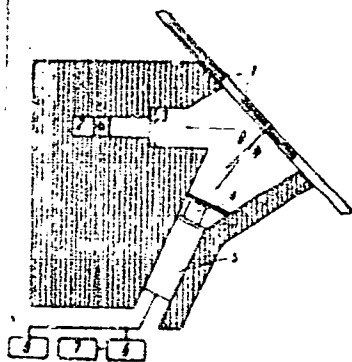
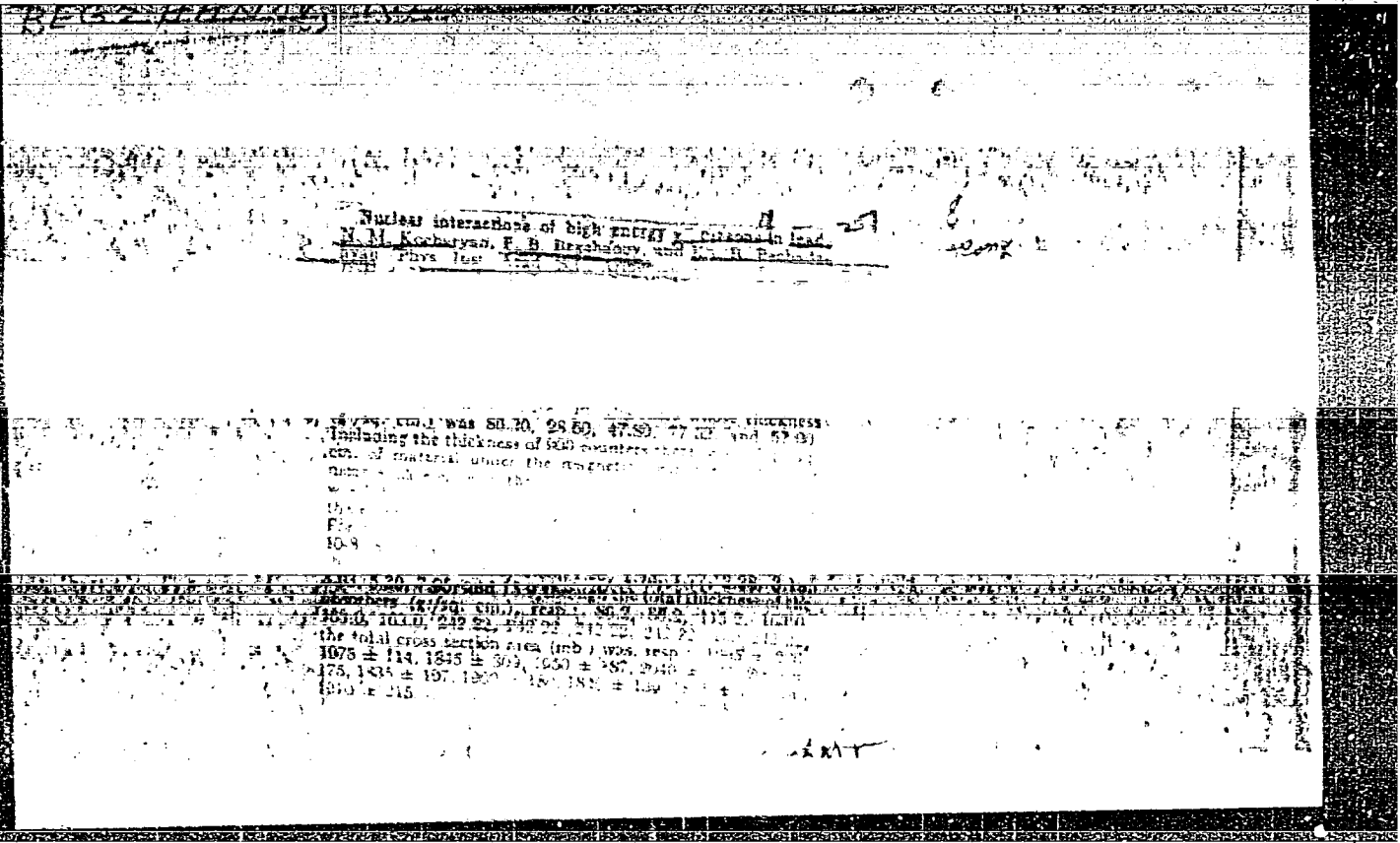


Fig. 1. Diagram of experimental set-up.

1 - Scatterers on moving slides, 2 - source in aluminum container, 3 - position of absorber (i.e. self-absorption experiment), 4 - NaI(Tl) crystal, 5 - photomultiplier, 6 - single-channel pulse analyzer, 7 - counter, 8 - A11100 pulse-height analyzer.

Card 3/3



128 2711000, R. B.

"Interaction of Protons With Lead Nuclei in the Energy Range 0.89-15 Bev," by N. M. Kocharyan, Corresponding Member, Academy of Sciences Armenian SSR, and R. B. Begzhanov, Physics Institute, Academy of Sciences Armenian SSR, Doklady Akademiya Nauk Armyanskoy SSR, Vol 25, No 1, 1957, pp 3-6

The total cross section for the inelastic interaction of protons with lead nuclei was measured at the Alagez cosmic ray station. Proton energies ranged from 0.89 to 15.0 Bev. The cross section was found to be approximately $1,740 \pm 90$ millibarns. The authors conclude from the data that the cross section for the inelastic interaction of λ^- -mesons with lead nuclei is $1,920 \pm 100$ millibarns over the energy range 0.8-16 Bev.

Experimental technique and apparatus are described.

Z. A. Kinrakovyan, Kh. B. Pachadzhyan, and A. S. Aleksanyan assisted in the measurements. (U)

Sum in 1467

21(1)

PHASE I BOOK EXPLOITATION

SOV/3363

Begzhanov, R. B.

Secheniya vzaymodeystviy π -mezonov i protonov bol'shikh energi s yadrami svintsa i spektry generatsii etikh chastits; avtoreferat dissertatsii, predstavlennoy na soiskaniye uchenoy stepeni kandidata fiziko-matematicheskikh nauk (Interaction Cross-sections of High-Energy Pions and Protons With Lead Nuclei, and Generation Spectra of These Particles; Author's Abstract of a Dissertation Offered For the Degree of Candidate of Physical and Mathematica' Sciences) Yerevan, 1958. 13 p. 200 copies printed.

Sponsoring Agency: Yerevanskiy gosudarstvennyy universitet.

Scientific Advisor: N. M. Kocharyan, Corresponding Member, Armenian SSR Academy of Sciences, Doctor, Professor.

PURPOSE: This book is intended for theoretical and nuclear physicists.

COVERAGE: The book reviews the more important experimental data on the nuclear interactions of nucleons and high-energy pions and on the spectra of particles created during nuclear interactions between fast neutrons and a substance. The experimental apparatus is described, and the following experimental results are outlined:

Card 1/3

Interaction Cross-sections (Cont.)

SOV/3363

1. The cross section of nonelastic interaction of both protons and pions with lead nuclei did not change with energies in the average range from 0.9 to 24 Bev for protons and from 0.9 to 34 Bev for pions, although the pion cross-sections were found to be somewhat larger than those of protons ($\sigma^p = (1740 \pm 90)\text{mb}$, and $\sigma^\pi = (1820 \pm 140)\text{mb}$).

2. In comparing data on the interaction cross-sections of pions and protons with Pb nuclei with data of other authors on the corresponding cross-sections of C, Fe and Cu nuclei, it was concluded that the nucleus of a substance becomes less transparent with increases in atomic number, at least for protons with energies up to 7 Bev and for pions with energies up to 12 Bev.

3. It was shown that nuclear models with homogeneous density and sharp boundaries and those which show density decreasing from the center of the nucleus (exponential and Gaussian distributions) do not permit the choice of a value for r_0 in the equation $R = r_0 A^{1/3} \cdot 10^{-13}$ cm, while with a homogeneously smooth nuclear model, deviations in nuclear dimensions obtained by nuclear and electromagnetic methods were eliminated.

Card 2/3

Interaction Cross-sections (Cont.)

SOV/3363

4. Interactions computed with optical models having a homogeneously smooth distribution of nucleons in the nuclei, and with experimental cross-sections of elastic interaction of high energy protons and pions with nuclei, were $\sigma = (32 \pm 3)$ mb and $\sigma = (33 \pm 5)$ mb, respectively;

5. Nuclear interactions produced in a 94.8-g.cm^{-2} thick copper plate by cosmic ray neutrons yielded an approximately equal number of positive and negative pions (the ratio of their numbers $f = 1.08 \pm 0.06$) in the meson pulse interval from 353 to 994 Mev. sec^{-1} . Reference 9 gives an analytical expression for the light energy of a magnetic spectrometer, derived by the author and others, for obtaining the absolute intensity of different components. The spectra of proton and pion generation by protons and neutrons at energy levels up to 32 Bev were recorded. The spectra were well approximated by a power function in energy ranges where ionization losses in the generator itself could be disregarded. The work was carried under direction of Doctor-Professor N. M. Kocharyan, Corresponding Member, Armenian SSR Academy of Sciences. There are 9 Soviet references.

TABLE OF CONTENTS: None given

AVAILABLE: Library of Congress

Card 3/3

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4-8-60

BEGZHANOV, R.B., Cand Phys Math Sci -- (dis) "Cross sections
of reactions of ^{high energy} π -mesons and protons ~~of high energies~~ with lead
nuclei and the generation spectra of these particles." Yerevan,
1958, 14 pp (Min of Higher education USSR. Yerevan State Univ)
200 copies (KL, 27-58, 101)

$\pi = \pi$

ERQZHANOV, R.B.

Interaction of protons and negative π -mesons with lead nuclei
in the 0.89 to 16 Bev region. Izv. AN Uz. SSR. Ser. fiz. -mat.
nauk no.3:11-19 '58. (MIRA 11:10)

(Nuclear reactions)

BEGZHANOV, R.B.

Light intensity of magnetic spectrometers. Izv. AN Uz. SSR. Ser.
fiz.-mat.nauk no.4:37-43 '58. (MIRA 11:11)

1. Fizicheskiy institut AN Arm. SSR i Fiziko-tekhnicheskiy institut
AN Uz. SSR.

(Spectrometer)

BEGZHANOV, R.B.; KHARITONOV, V.M.

Setting up experiments for determining interaction paths and statistical errors in measurements. Dokl. AN UzSSR 26 no.3: 141-144 '58. (MIRA 12:10)

1. Fizicheskiy institut AN Argyanskoy SSR i Fiziko-tekhnicheskiy institut AN Uzbekakoy SSR, Predstavleno A.I. Alikhanyanov.
(Filters and filtration)

SOV/56-34-3-51/55

AUTHOR: Begzhanov, R. B.

TITLE: The Nucleon-Nucleon Cross Section in the Range of Great Energies (Nuklon-nuklonnoye secheniye v oblasti bol'shikh energii)

PERIODICAL: Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, 1958, Vol. 34, Nr 3, pp. 775 - 776 (USSR)

ABSTRACT: The cross section σ_a of the non-elastic interaction of protons with mean energies of from 0,9 to 34 BeV with Pb- and C-nuclei was determined by means of the magnetic spectrometer by Alikhanyan-Alikhanov (References 1, 2). The cross section of the nucleon-nucleon interactions $\bar{\sigma}$ with the energies to be investigated can than be determined from these data on the basis of the optical model (Reference 3), and besides the most reasonable form of distribution of the nucleons in the nucleus can be found. R. Hofstadter (Gofshtater) (Reference 4) concluded from the scattering of electrons with high energies on nuclei that in the case of medium and heavy nuclei the distribution of the protons can be represented by a so-called homogeneous smoothed distri-

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SOV/56-34-3-51/55

The Nucleon-Nucleon Cross Section in the Range of Great Energies

tribution of the type $\rho(r) = \rho_0 \left\{ \exp \left[\frac{r-c}{z} \right] + 1 \right\}^{-1}$.

Here $c = 1,08.A^{1/3} \cdot 10^{-13}$ cm holds, $z = 0,53 \cdot 10^{-13}$ cm, and ρ_0 denotes the density at $r = 0$ and A denotes the atomic weight. The radial distribution of the protons and neutrons are the same to a difference of 3%. Therefore the distribution of the nucleons in the nucleus is supposed to agree with the distribution of protons. The measurements by Kocharyan et al. (References 1, 2) directly furnish the inelastic cross section σ_a for which reason the whole apparatus of the optical model need not be used. According to S. Fernbach, R. Serber and T. B. Taylor (Reference 3) the author computes the cross section σ_a by means of the semiclassical method of the target parameter. The proton wave is exponentially damped on its passage through the nucleus by means of the absorption coefficient $K(r) = \rho(r)\sigma_a$. The size and the shape of the nucleus is determined by the distribution of density $\rho(r)$. The author finds the cross section

$$\sigma_a = 2\pi \int_0^{\infty} \left\{ 1 - \exp \left[-2 \int_0^{\infty} K(\sqrt{b^2 + s^2}) ds \right] \right\} b db$$

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The Nucleon-Nucleon Cross Section

in the Range of Great Energies

SOV/56-34 3-51/55

using the relation $r^2 = b^2 + s^2$, where b denotes the target parameter. The author computed σ^a for the above-mentioned detailed smoothed distribution. The cross section of the inelastic interaction of the protons with the C- or Pb nuclei determined this way have the values $\sigma^a = (210 \pm 15)$ millibars or $\sigma^a = (1740 \pm 90)$ millibars respectively; they coincide with the values computed for the $\bar{\sigma} = (32 \pm 3)$ millibars. The best coincidence between the computed and the experimental cross sections are obtained for $c = (1.13 \pm 0.04) \cdot 10^{-13} \cdot A^{1/3}$ cm. The nuclear radius R obtained by means of the smoothed nuclear model coincides with the electromagnetic measurements. The results obtained here are in good agreement with the experiments for the determination of the nucleon-nucleon cross sections with energies of up to 5.3 BeV, as well as of the nucleon-nuclear cross sections. At least up to 34 BeV the main characteristics of the interaction processes do not differ from the interaction within the range of energies accessible to modern accelerators. There are 9 references, 3 of which are Soviet.

Card 3/4

The Nucleon-Nucleon Cross Section ^{SOV/56-34-3-51/55} in the Range of Great Energies

ASSOCIATION: Fizicheskiy institut Akademii nauk Armyanskoy SSR
(Institute for Physics AS Armenian SSR)

SUBMITTED: December 25, 1957

Card 4/4

AUTHOR: Begzhanov, R. B.

56-34-4-41/60

TITLE: On the Cross Section of Pion-Nucleon Interaction Within the Range of High Energies (O poperechnom sechonii π -mezon-nuklon-nogo vzaimodeystviya v oblasti bol'shikh energiy)

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1958, Vol. 34, Nr 4, pp. 1013 - 1014 (USSR)

ABSTRACT: First the author reports in short on earlier papers dealing with the same subject. On the basis of experimental data concerning the cross sections of the inelastic interactions between pions and the nuclei of graphite and lead (at energies of from 0.9 to 34 BeV) the cross sections of inelastic interactions and of the opacity of nuclei are calculated in the course of the present work. The author uses the homogeneous balanced nuclear model. When the cross section for the interaction between pions and nucleons is put equal to $\sigma(\pi) = 33$ millibarn the calculated values of the interaction cross sections agree with the corresponding experimental values if the value $r = (1.14 \pm 0.04) \cdot 10^{-13} A^{1/3}$ cm is assumed for the radial parameter of the balanced distribution.

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On the Cross Section of Pion-Nucleon Interaction Within the Range of High Energies

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By taking into account the experimental errors $\bar{\sigma}(\pi) = 33 \pm 4$ millibarn are obtained. Similar results are also obtained in the analysis of the cross section for the interaction of negative pions with the energies 0,97 BeV, with the nuclei using an homogeneous balanced nuclear model. The obtained value $\bar{\sigma}(\pi) = 33 \pm 4$ millibarn within the investigated range of energies agrees well with such data as result from the direct measurement of the cross section of pion-nucleon interaction within the energy range that can be attained by present-day accelerators. At energies above 1,9 BeV the cross section of pion-nucleon interaction does not depend on energy, at least not up to the energy of 34 BeV. There are 3 references, 3 of which are Soviet.

SUBMITTED: January 8, 1958

1. Neutron cross sections---Measurement

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EGZHANOV, R.B.

Statistical errors in the measuring of nuclear interaction cross sections. Dokl. AN UzSSR no.2:15-18 '59. (MIRA 12:4)

1. Institut yadernoy fiziki AN UzSSR. Predstavleno akademikom AN UzSSR U.A. Arifovym.

(Nuclear reactions)

68586

S/166/60/000/01/006/011

24,660
21(1), 21(7), 21(8)

AUTHOR: Begshanov, R.B.

TITLE: On π -Mesons¹⁹ and Protons Arising During a Nuclear Interaction of the Nucleons With the Matter

PERIODICAL: Izvestiya Akademii nauk Uzbekskoy SSR, Seriya fiziko-matematicheskikh nauk, 1960, Nr 1, pp 47-57 (USSR)

ABSTRACT: This is a report on the experimental investigation of the properties and the spectrum of particles with high energies which are generated during the collision of the nucleons of the cosmic radiation with the matter. The experiments were carried out at the station for cosmic radiation in Alagez. The magnetic spectrometer of Alikhayan-Alikhanov was used. The particles were generated in a copper absorber by charged and neutral components of the cosmic rays. The intensity of the magnetic field was 7100 e. The mean quadratic error in the measurement of the impulses of the particles was 2,2 % for impulses of 1×10^9 ev sec⁻¹ and then it increased proportionally to the impulse. It was stated: The ratio of the numbers of generated π^- and π^+ -mesons

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On π -Mesons and Protons Arising During a Nuclear Interaction of the Nucleons With the Matter

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$f = \frac{N_{\pi^-}}{N_{\pi^+}}$ is 1,30. The spectra of the generated π -mesons and protons are given. The obtained results are compared with numerous western and Soviet investigations about the same theme. The author mentions N.M.Kocharyan, A.V.Khrimyan, S.N.Vernov, G.S.Saakyan, G.M.Garibyan, and I.I.Gol'dman. There are 5 figures, 2 Tables, and 32 references, 19 of which are Soviet, 4 English, 1 German, and 8 American.

ASSOCIATION: Institut yadernoy fiziki AN Uz SSR (Institute of Nuclear Physics AS Uz SSR)

SUBMITTED: March 19 1959

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27145
S/166/61/000/004/004/007
B112/B102

21-6000

AUTHORS: Begzhanov, R. B., Ivanovskiy, V. V.

TITLE: Study of the parameters of a scintillation spectrometer

PERIODICAL: Akademiya nauk Uzbekskoy SSR. Izvestiya. Seriya fiziko-
matematicheskikh nauk, no. 4, 1961, 45 - 51

TEXT: The authors study the energy resolution and the efficiency of a scintillation spectrometer. On the one hand, scintillation spectrometers have a relatively high sensitivity to gamma radiation, on the other, they have a low resolution of the energy distribution of gamma radiation. For this reason, little is known about the energy resolution of scintillation spectrometers, and its comparison with theoretical values is difficult. The spectrometer examined by the authors consisted of an amplifier of the type ФЭУ-С (FEU-S) and a 40 mm thick and 40 mm high NaI(Tl) spectrometer crystal. The measuring arrangement consisted of a photomultiplier, a cathode follower, an amplifier, and a one-channel discriminator. The authors measured the spectral lines of Cr⁵¹ and Zn⁶⁵. It is shown that under certain conditions - mainly under the condition that the gamma lines
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B112/B102

Study of the parameters of a ...

have Gaussian shape - the following holds for the half width η of the gamma lines: $\eta^2 = \alpha + \beta/E$, where α and β are spectrometer constants. The authors arrived at the following conclusions: The resolution of the spectrometer is 0.5 Mev for soft radiation and somewhat less for hard radiation. The theoretical values of the photoelectric effect cross section of the NaI(Tl) crystal can be used for determining the efficiency of the spectrometer for γ -lines which satisfy the condition $\eta \cdot 100\% < 0.5 \cdot 100\% / (2E + 0.5)$. In this case the error is approximately 10%. There are 3 figures, 2 tables, and 4 references: 2 Soviet and 2 non-Soviet. X

ASSOCIATION: Akademiya nauk UzSSR (Academy of Sciences Uzbekskaya SSR)

SUBMITTED: September 30, 1960

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S/166/62/000/001/004/009
B125/B104AUTHOR: Begzhanov, R. B.

TITLE: Interaction cross section of high-energy particles

PERIODICAL: Akademiya nauk Uzbekskoy SSR. Izvestiya. Seriya fiziko-
matematicheskikh nauk, no. 1, 1962, 33 - 36

TEXT: The author determined the inelastic interaction cross sections of high-energy proton and pions at the Amgan station (3,200 m) by employing a magnetic spectrometer according to Alikhanyan-Alikhanov. Fluxes of charged particles produced by neutrons in a copper absorber, which was located above the spectrometer have been investigated with a set of Geiger-Mueller counters. The root mean square error for the momenta 1; 5; 10; and 50 Bev/C amounts to 2.2; 11; 22; and 66%. The interaction cross section of negative pions was found immediately due to the identity of the negative particle flux with that of the negative pion flux. The cross section of the nuclear interaction of protons has been found by using the relation $\sigma(\pi^-) = \sigma(\pi^+)$ from $\sigma^{(p)} = (N_+ \sigma^{(+)} - N_\pi \sigma^{(\pi)}) / (N_+ - N_\pi)$ which is

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Interaction cross section of ...

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valid at high energies; N_+ denotes the number of absorbed particles; N_{π} the number of the positive pions was assumed to be equal to the number of the negative pions; σ^+ and $\sigma(\pi)$ are the cross sections of the inelastic nuclear interaction of the flux of positive particles and negative pions, respectively. Table 1 shows the cross sections of inelastic interaction of mesons, table 2 that of protons and positive particles with lead nuclei. Neither Coulomb scattering nor diffraction scattering played an essential role. The number of deuterons produced in the positive particle flux was insignificant. The results of these two tables agree with results obtained in America with 4 to 5 Bev accelerators. The inelastic interaction cross sections of protons and negative pions with lead nuclei are constant within error limits from 2.0 to 24 Bev for protons and 1.5 to 35 Bev for mesons. There are 1 figure, 2 tables, and 9 references: 5 Soviet and 4 non-Soviet. The four references to English-language publications read as follows: Abashian A. et al., Bull. Am. Phys. Soc., 7, 350, 1956; Chew F. et al., Phys. Rev., 99, 857, 1955; Chew F. et al., Bull Am. Phys. Soc., 29, 47, 1954; Coor T., Hill D. et al., Phys. Rev., 98, 1369, 1955.

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B125/B104

Interaction cross section of ...

ASSOCIATION: Akademiya nauk UzSSR (Academy of Sciences Uzbekskaya SSR)

SUBMITTED: August 16, 1960

Table 1. Cross sections of inelastic interaction of mesons with lead nuclei.
Legend: (1) Intervals of the momenta, Bev/C; (2) mean kinetic energy, Bev;
(3) interaction cross sections, barn.

(1)	(2)	(3)
1.32-1.19	1.45	1.950±0.187
1.59-1.19	1.77	2.040±0.167
1.99-2.55	1.20	2.060±0.175
2.65-3.98	3.18	1.835±0.197
3.19-5.30	3.93	1.965±0.180
3.98-7.95	5.30	1.840±0.139
5.30-15.9	7.95	1.815±0.197
7.95-∞	34.40	1.810±0.215

Table 1

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Table 2. Inelastic interaction cross section of protons and positive particles with lead nuclei.

Legend: (1) intervals of momenta, Bev/C; (2) mean kinetic energy of protons, Bev; (3) cross sections for the mixture of positive particles, barn; (4) proton cross sections, barn.

1.99 - 2.65 (1)	1.93 (2)	1.720 ± 0.180 (3)	1.870 ± 0.145 (4)
2.65 - 3.98	2.37	1.640 ± 0.150	1.702 ± 0.185
3.19 - 5.30	3.60	1.780 ± 0.170	1.791 ± 0.220
3.98 - 7.95	5.16	1.860 ± 0.208	1.850 ± 0.260
5.30 - 15.90	7.46	1.780 ± 0.230	1.711 ± 0.300
7.95 - ∞	24.60	1.830 ± 0.280	1.770 ± 0.360

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S/056/62/043/003/011/063
B125/B102AUTHORS: Kaipov, D. K., Shubnyy, Yu. K., Begzhanov, R. B., Islamov,
A. A.TITLE: Resonance scattering of γ -quanta from Sn^{116} nucleiPERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 43,
no. 3(9), 1962, 808-812

TEXT: The method of resonance scattering was applied to 1290-keV γ quanta from the Sn^{116} nuclei of a gaseous $\text{In}^{116\text{m}}\text{Cl}_3$ source (Fig. 1) to determine the lifetime of the first excited 1.29-MeV level. A similar value is obtained by the method of Coulomb excitation. The InCl_3 produced from enriched metallic indium was sublimated into a quartz ampoule, which was then evacuated and subjected for 1 hr to the thermal neutron flux ($\sim 10^{13}$) of a BBP-C (VVR-S) reactor. Following this it was heated to 500-550°C for 1 to 2 hrs so that InCl_3 sublimed (~ 0.7 atm). The γ -quantum scattering was measured by two symmetrically arranged scintillation

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spectrometers (Fig. 1). The time dependence of the counting rate was determined by using first a solid source and then a heated gaseous source in 28 series of measurements. With cold sources the increase in the counting rate with time is approximately exponential and with gaseous sources almost exactly so. Owing to the resonance effect the transition of InCl_3 into the gaseous state creates a peak at 1.29 Mev in the

scattered radiation spectrum. Allowing for the self-absorption of the γ -quanta in the scatterer and their angular distribution the mean value $\bar{\sigma}$ of the resonance cross section is $\bar{\sigma} = (5.31 \pm 0.50) \cdot 10^{-26} \text{ cm}^2$. No $\beta\gamma$ and no $\gamma\gamma$ correlations are assumed in the cascade, and the free

$\text{In}^{116\text{m}}$ atom is repelled. Taking account of all cascades $N(E_p) = 0.0127 \text{ ev}^{-1}$

follows for the microspectrum. From this value, and from the experimentally determined value of $\bar{\sigma}$, the lifetime of the 1.29-Mev level is $\tau_\gamma = (1.8 \pm 0.27) \cdot 10^{-12} \text{ sec}$ (transition $2^+ \rightarrow 0^+$). For the same lifetime the method of self-absorption gives $\tau_\gamma = (6.4 \pm 2.7) \cdot 10^{-13} \text{ sec}$. This value agrees with that obtained from the Coulomb excitations. The considerable divergence between the lifetimes found by the two methods

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Resonance scattering of ...

is due to the effect of the chemical bonds in the molecule on the energy distribution of the γ -quanta. The E2-transition with $E_\gamma = 1290$ kev (solid source) is an accelerated transition with the acceleration factor 10.5. There are 5 figures.

ASSOCIATION: Institut yadernoy fiziki Akademii nauk Kazakhskoy SSR (Institute of Nuclear Physics of the Academy of Sciences Kazakhskaya SSR). Institut yadernoy fiziki Akademii nauk Uzbekskoy SSR (Institute of Nuclear Physics of the Academy of Sciences Uzbekskaya SSR)

SUBMITTED: April 19, 1962

Fig. 1. Schematic drawing of the experimental arrangement.
Legend to Fig. 1: (1) source; (2) electric furnace; (3), (4) Sn and Cd absorber (in experiments with self-absorption); (5) lead cone; (6), (9) Sn and Cd scatterer; (7) NaJ (Tl) crystal, (8) photomultiplier.

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