SMIRNOV, S.S.; RUDNICHENKO, V.I.; RADCHENKO, I.P.; EYSMONT, I.I.

Mechanization of oil change in reductors. Koks i khim.
no.16:35 '61.   (MIRA 15:2)

1. Bagleyskiy koksokhimicheskiy zavod.
                 (Coke industry--Equipment and supplies)

BYSMONT, K.I., inzhener-ozelenitel'.

Roadside plantings along the highways of Poltava Province. Avt.dor.
19 no.12:16-17 D '56.   (MIRA 10:10)
                        (Poltava Province--Roadside improvement)

YSMONT, K.I.

Eleven years' experience of a collective farm road brigade. Avt.dor.
20 no.3:16-17 Mr '57.   (MLRA 10:5)
                    (Roads--Maintenance and repair)
                         (Collective farms)

EYSMONT, K.I.

Using roadside orchards as a reliable protection against snow.
Avt. dor. 23 no.5:17 My'60.   (MIRA 13:10)
    (Ukraine--Roads--Snow protection and removal) (Roadside improvement)

EYSMONT, K.I., inzh.

Pruning shears for cutting shrubs. Avt.dor. 26 no.4:25 Ap '63.
(MIRA 16:4)

(Pruning shears)

1. EYSMONT, L. A.

2. USSR (600)

4. Afforestation - Zhitomir Province

7. We are fighting for full conservation of plantings, Les i step', 14,

   No. 11, 1952.

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

KIRSENKO, O.V.; PALLADIN, A.V.; ROZHMANOVA, O.M.; EYSMONT, S.S.

Adenosinetriphosphatase activity in the nervous tissue. Ukr.
biokhim. zhur. 35 no.6:807-815 '63.   (MIRA 18:7)

1. Institut biokhimii AN UkrSSR, Kiyev.

Lysmont, V. P.

82-10-20/35

AUTHORS: Protopopov, A. N., Lysmont, V. P.

TITLE: The Angular Distributions of Light and Heavy Fragments From the 14 MeV Neutron Fission of U^{238} (Ob uglovom raspredelenii legkikh i tyazhelykh oskolkov pri delenii U^{238} neytronami s energiyey 14 MeV).

PERIODICAL: Atomnaya Energiya, 1958,   r 2, pp. 194-195 (USSR).

ABSTRACT: With none of the hitherto known nuclear models the following question can be answered: Do light and heavy fission fragments have the same angular distribution or is there a certain anisotropy? The authors try with new measurements to add to the experimental data hitherto known. The distribution of light and heavy fission fragments in the direction parallel to the direction of entering neutrons is measured and shows the following results:

Serie.	Number of registered fission pairs.	Number of light fragments ejected at an angle of 0°.	Number of light fragments ejected at an angle of 180°.
1	303	140	163
2	553	284	269

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The Angular Distributions of Light and Heavy Fragments from the   89-1c-2o/35

		424 ± 21	432 ± 21
Sum	856		

Statistical error

The results show that the angular anisotropy increases with the increasing ratio between fission fragments and mass. The same effect was also observed with the fission of U^{238}, U^{235}, U^{233}, Th^{232} and Th^{230} with 22 MeV protons. There are 1 table, and 4 references.

SUBMITTED. . March 28, 1957.

AVAILABLE. Library of Congress.

Card 2/2   1. Fission fragments-Diffusion

Eysmont, V. P.

56-1-48/56

AUTHORS: Protopopov, A. N. , Eysmont, V. P.

TITLE: On the Angular Anisotropy of the Flying off of Fragments in the Fission of Pu^{239} by Neutrons With the Energy 14 MeV (Ob uglovoy anizotropii vyleta oskolkov pri delenii Pu^{239} neytronami s energiyey 14 MeV)

PERIODICAL: Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, 1958, Vol. 34, Nr. 1, pp. 250 - 251 (USSR)

ABSTRACT: The degree of anisotropy of the fission of Pu^{239} was determined with an ionization chamber. The target of Pu^{239} (with a density of ~300 microgram/cm^2) was fastened to a collimator. The fission was excited by neutrons with the energy 14,8 MeV. By a simple rotation of the chamber around its axis one goes over from the counting of the fragments under the angle 0° to the counting of the fragments under the angle 90° (with reference to the neutron beam). The maximum angle between the direction of flying off of the fragments and the fixed direction (0° and 90°) amounted to 25°. For Pu^{239} the degree of anisotropy 1,14 was found here. For the degree of anisotropy for U^{235} the value 1,25 was found. Corrections for the motion of the center of gravity, the inaccuracy of the angle determination and for the background of the scattered neutrons were made in the

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56-1-48/56

On the Angular Anisotropy of the Flying off of Fragments in the Fission of Pu^{239} by Neutrons With the Energy 14 MeV

quantities measured here. In this manner the values $1,15 \pm 0,05$ for Pu^{239} and $1,28 \pm 0,07$ for U^{235} are found for the final values of the degree of anisotropy. The results found here show that the anisotropy of the nuclei with the same parity is not only determined by the amount of the spin of the target-nucleus. The anisotropy decreases with increasing value of the parameter Z^2/A. Unfortunately the small number and the low accuracy of the experimental data do not permit any exacter determination of the dependence of the degree of anisotropy on the parameters of the nucleus. The quantum effects may manifest themselves as certain deviations from the fundamental tendency for the reduction of the anisotropy on transition to heavier nuclei. There are 1 figure, and 10 references, 4 of which are Slavic.

ASSOCIATION: Radium Institute AN USSR (Radiyeviy institut Akademii nauk SSSR)

SUBMITTED: October 22, 1957

AVAILABLE: Library of Congress

Card 2/2

E. Ysmont, V. P.

PHASE I BOOK EXPLOITATION

Akademiya nauk SSSR. Radiyevyy Institut

Trudy, t. IX (Transactions of the Radium Institute, Academy of Sciences USSR, Vol. 9) Moscow, Izd-vo AN SSSR, 1959. 287 p. Errata slip inserted. 1,700 copies printed.

Ed.: N.A. Perfilov, Doctor of Physical and Mathematical Sciences; Ed. of Publishing House: G.N. Aronj Tech. Ed.: A.V. Smirnova.

PURPOSE: The volume is intended for physicists.

COVERAGE: The book represents volume 9 of the Transactions of the Radium Institute and contains the results of studies conducted at the Institute chiefly from 1955 to 1956. There are a number of articles dealing with the study of nuclear reactions occurring with particles of different energies ranging from several eV up to hundreds of MeV. Others treat different problems of the physics of neutrons. Results of studies of various neutron sources, neutron energy distribution in a moderator (water), and other problems connected with the theory of neutron interaction with matter are presented. The majority of the articles are screened with problems of method. The authors provide a complete description of the apparatus, of equipment and of the results of tests performed under laboratory conditions. In personalities is mentioned. References accompany individual articles.

Shamov, V.P. Uranium Fission due to High Excitation Energy   45

Shamov, V.P. Fission of Heavy Nuclei (Z<73) due to High Excitation Energy   52

Prokopyev, A.M., Yu.A. Selitskiy, and S.M. Solovyev. Cross Section for   55
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Bak, M.A., G.N. Gorobets, V.I. Matviyenko, ... Radium-Beryllium Source...

Card 1/3

EYSMONT, V. P. Cand Phys-Math Sci -- (diss) "Angle anisotropy of the process
of fission of heavy nuclei by neutrons with an energy of 14 Mev." Len, 1959.

13 pp (Acad Sci USSR. Radium Inst im V. G. Khlopin,Acad Sci USSR), 175 copies

Bibliography at end of text (14 titles) (KL, 41-59, 103)

-7-

21(7)

SOV/89-6-6-5/27

AUTHORS: Protopopov, A. N., Eysmont, V. P.

TITLE: Anisotropy of the Process of the U^{238} Fission by Neutrons of Energies of 14 Mev (Anizotropiya protsessa deleniya U^{238} neytronami s energiyey 14 Mev)

PERIODICAL: Atomnaya energiya, 1959, Vol 6, Nr 6, pp 644 - 647 (USSR)

ABSTRACT: In continuation of a previous paper (Ref 1) the authors of the present article give further results of investigations of the anisotropy, carried out by means of a double ionization chamber. By way of introduction the experimental order is described (see figure 1). The 14.4 Mev neutrons were formed in the reaction $T(d,n)He^4$ - a tritium-zirconium target was irradiated with 180 kev deuterons. The energy distribution was determined with respect to two directions "0°" and "90°" to the neutron beam. The neutron source was always at a distance of 15 cm from the center of the fissioning layer the diameter of which was 2.5 cm. The maximum angle between the direction of the departure of the fragments and the axis of the collimator channel was 9°; in position "0°" the maximum angle was between

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Anisotropy of the Process of the U^{238} Fission by   SOV/89-6-6-5/27
Neutrons of Energies of 14 Mev

the directions of the neutrons causing a fission and of the
recording fragments $\leq 15°$, in position "90°" the minimum
angle was between these two directions $\geq 75°$. The energy of
the fission fragments was determined by a comparison of the
fragment momenta with the momenta of the α-particles of U^{238}.
In each of the two reference directions about 2000 fissions
were recorded. The fragments may be divided into 3 groups
according to their proportion by weight; the results of the
measurements of angular distribution are listed in a table:

mass ratio of the fragments	"0°"	"90°"	
1.0 - 1.3	45±3	46±3	The numbers indicate the ratio between the number of the cases of one flying away of light fragments and the total number of fissions in % with the statistical error i.e. the part of the light fragments did not deviate
1.3 - 1.5	50±3	53±3	
1.5 and more	54±3	49±3	
1.0 and more (total spectrum)	50±2	49±2	

Card 2/3

from 50% within the experimental accuracy and the angular
distribution of the light fragments was symmetrical with an

Anisotropy of the Process of the U^{238} Fission by   SOV/89-6-6-5/27
Neutrons of Energies of 14 Mev

error of $\pm 3\%$ with respect to the vertical direction to the
neutron beam. Figure 2 shows the mass distribution of the frag-
ments $(0^{\circ}, 90^{\circ})$ in a diagram. It was found that in the case
of a mass ratio of the fragments smaller than $1.7 - 1.8$ the
angular anisotropy increases with increasing mass asymmetry.
The results were compared with those of other authors and
discussed with respect to the statistical theory of angular
distribution of fission fragments by V. M. Strutinskiy (Ref 8).
In conclusion, the authors thank M. I. Kuznetsov for assistance.
There are 2 figures, 1 table, and 8 references, 2 of which are
Soviet.

SUBMITTED: December 12, 1958

Card 3/3

$E y s \; m o n \; T, \; l. \; P.$

21(7)
AUTHORS: Protopopov, A. N., Baranov, I. A., Eysmont, V. P.   SOV/56-36-3-42/71

TITLE: On the Angular Anisotropy of the Flying Apart of Fragments in the Fission of Am241 by 14.7 Mev Neutrons (Ob uglovoy anisotropii razleta oskolkov pri delenii Am241 neytronami s energiyey 14.7 MeV)

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1959, Vol 36, Nr 3, pp 920-921 (USSR)

ABSTRACT: In order to determine the influence exercised by nuclear structure on the angular anisotropy in a fission process it is necessary to investigate the angular distribution of the fission fragments of the greatest possible number of nuclei. In an earlier paper (Ref 2) the method was already described by means of which the authors determined the relative number of fragments parallel and vertical to the direction of the incident neutrons in Am241 fission. In consideration of the effect of center of mass motion, the finite angular resolution, and the background of scattered neutrons, the degree of angular anisotropy was determined as amounting to 1.08 ± 0.06, which is not in contradiction to Bohr's re-

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On the Angular Anisotropy of the Flying Apart of Fragments in the Fission   SOV/56-36-3-42/71
of Am241 by 14.7 Mev Neutrons

presentation (Ref 4). Anisotropy has a certain tendency to diminish with Z^2/A of the fissioning nucleus, but, as a comparison of

Np^{237} : 1.16 ± 0.02 (Ref 1)
Pu^{239} : 1.15 ± 0.03 (Ref 2)
Am^{241} : 1.08 ± 0.06

shows, asymmetry in the case of transuranium changes only very slowly. The general effect can be explained within the framework of the statistical theory by V. M. Strutinskiy. The authors finally thank G. I. Khlebnikov for the deposition of Americium on the platinum foils.
There are 5 references, 4 of which are Soviet.

SUBMITTED: December 6, 1958

21(7)

AUTHORS: Protopopov, A. N., Eysmont, V. P.   SOV/56-36-5-47/76

TITLE: On the Dependence of the Degree of Angular Anisotropy in the Fission Process on Nuclear Structure (O zavisimosti stepeni uglovoy anizotropii protsessa deleniya ot struktury yadra)

ABSTRACT: From the recently obtained experimental data on the angular distribution of the fission fragments of various heavy nuclei it may be concluded that a certain connection exists between the degree of anisotropy of the angular distribution $\epsilon(0°)/\epsilon(90°)$ and the parameter Z^2/A of the fissioned nucleus, for the degree of anisotropy decreases with increasing Z^2/A. The authors of the present "Letter to the Editor" endeavor to explain this connection thermodynamically. They base on the assumption that in the case of a sufficiently high excitation energy of the compound nucleus the ratio of the fission cross sections at 0 and $90°$ to the direction of the flight of particles differs considerably from one nucleus to another in accordance with

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On the Dependence of the Degree of Angular Anisotropy in   SOV/56-36-5-47/76
the Fission Process on Nuclear Structure

$G'(0°)/G'(90°) \sim \exp(\Delta E/T)$, where ΔE denotes the difference of the fission activation energies parallel and perpendicular to the beam, and T is the temperature of the nucleus in the critical state of deformation. For the heavy nuclei investigated ΔE does not depend on the structure of the target nucleus and also not on the properties and the energy of the inciding particle. Nuclear temperature before fission depends in a high degree on the properties of the nucleus (i.e. on Z^2/A) and also on the excitation energy E of the nucleus: $T = 2(E/a)^{1/2}$, $a=3.4.(A-40)^{1/2}$ Mev^{-1}. The excitation energy consists of the kinetic energy E_{kin} of the particles and their binding Energy E_b, the energy of neutron evaporation E_{evap} and the energy of the critical deformation E_{def}: $E = E_{kin}+E_b+E_{evap}+E_{def}$. By evaluation of the individual values the authors determined nuclear temperature in the state of

Card 2/3   critical deformation for the following nuclei: Th^{232}, U^{238}, U^{235},

On the Dependence of the Degree of Angular Anisotropy in the   SOV/56-36-5-47/76
Fission Process on Nuclear Structure

U^{233}, Np^{237}, Pu^{239} and Am^{241} for the case of fission by 14.3 - 14.8 Mev neutrons. By using the data obtained by a number of other authors they obtained for the dependence of the $\ln[\sigma(0°)/\sigma(90°)]$ of 1/T a straight line (see figure), round which the experimental values vary within the limits of error. The ratio $\sigma(0°)/\sigma(90°)$ is actually found to differ considerably from one nucleus to another, viz. like $\exp(\Delta E/T)$ at ΔE = const and $T = f(Z^2/A)$. There are 1 figure and 6 references, 3 of which are Soviet.

SUBMITTED: December 29, 1958

Card 3/3

21(7)
AUTHORS: Protopopov, A. N., Baranov, I. A.,   SOV/56-36-5-71/76
               Eysmont, V. P.

TITLE: The Angular Anisotropy and the Energy Characteristics
               of the Fission Process (Uglovaya anizotropiya i
               energeticheskiye kharakteristiki protsessa deleniya)

ABSTRACT: The fact that in the case of experimental and theoretical
               investigations of angular anisotropy the problems of energy
               distribution over the fragments have hitherto not been
               directly touched, gave rise to experimental investigations
               carried out by the authors in this direction which are
               briefly described by the present "Letter to the Editor".
               In the introduction the problem is discussed and several
               known dependences are given, as, e. g., that anisotropy
               is all the greater, the greater neutron evaporation before
               a critical deformation occurs. The authors investigated the
               fission of U^{238} by 14.9 Mev neutrons. By means of a double
               ionization chamber the energy of the fragments in the
Card 1/2

The Angular Anisotropy and the Energy Characteristics   SOV/56-36-5-71/76
of the Fission Process

     direction of the neutron beam (0°) and perpendicular

     hereto (90°) was measured. Angular distribution was the
     same whenever the direction of the departure of the

     fragments deviated by not more than 26° from the directions

     0 and 90° respectively. The basic conditions and methods
     of the investigation were the same as described in reference

     3; a total of 5000 fissions was investigated at 0°, and

     4000 at 90°. It was found that in the case of a mass ratio
     of fragments of 1.40 - 1.44, the average kinetic energy

     of the fragments amounts to 170.7 $\pm$ 0.6 Mev (0°) and

     169.4 $\pm$ 0.8 Mev (90°) respectively. If, therefore, a
     difference in fragment energy exists, it cannot amount
     to more than 1.5 %. There are 3 Soviet references.

SUBMITTED: February 27, 1959

Card 2/2

24(5)

AUTHORS:

Protopopov, A. N., Baranov, I. A.,
Selitskiy, Yu. A., Eysmont, V. P.   SOV/56-36-6-47/66

TITLE:

The Influence of Nuclear Shells on the Distribution of the
Kinetic Energy of Fragments in Fission by Fast Neutrons
(Vliyaniye yadernykh obolochek na raspredeleniye kinetiches-
koy energii oskolkov pri delenii na bystrykh neytronakh)

PERIODICAL:

Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1959,
Vol 36, Nr 6, pp 1932-1933 (USSR)

ABSTRACT:

The authors of the present "Letter to the Editor" report on
experimental investigations of the distribution of the entire
kinetic energy of the fragments in a fission of
U^{238} by 14.9 Mev neutrons. The results obtained are compared
with those obtained for a U^{235}-fission by 14.1 Mev neutrons
and those obtained from the spontaneous disintegration of Cf^{252}.
Measurements were carried out by means of a double ionization
chamber. From the experimental half width of kinetic energy
the charge distribution, the neutron recoil effect, the
fluctuations of the number of evaporated neutrons, the instru-
mental resolving power, and the mass ratio were determined.

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The Influence of Nuclear Shells on the Distribution of   SOV/56-36-6-47/66
the Kinetic Energy of Fragments in Fission by Fast Neutrons

The thus found dependence of the average kinetic energy E
and the half width of its distribution ΔE on the mass ratio
A_1/A_2 of the fragments are shown by figure 1 (compared with
the curves obtained for U^{235}-fission). The curves take an
analogous course, and in all cases the curve $E(A_1/A_2)$ and the
curve $\Delta E(A_1/A_2)$ have a maximum at a mass ratio of $1.25 + 1.3$.
Figure 2 shows the distribution of the kinetic energy of the
fragments in U^{235}-fission by thermal neutrons and of the
spontaneous disintegration of Cf^{252} obtained by measuring the
time of flight. It was found that the kinetic energy attains
its highest value when the heavy fragment has a mass number
near 132. This nucleus probably consists of closed shells of
50 protons and 82 neutrons. It may thus be assumed that the
degree of closure of the nuclear shells influences the size
of the fragments. There are 2 figures and 6 references.

SUBMITTED: February 21, 1959
Card 2/2

S/030/61/000/008/005/005
B105/B206

AUTHOR: Eysmont, V. P., Candidate of Physical and Mathematical
             Sciences

TITLE: The physics of nuclear fission

PERIODICAL: Akademiya nauk SSSR. Vestnik, no. 8, 1961, 118-120

TEXT: A Conference on the physics of nuclear fission was held in Leningrad
from April 18 to 24, 1961. It was convened at the suggestion of the
Radiyevyy institut im. V. G. Khlopina Akademiya nauk SSSR (Radium
Institute imeni V. G. Khlopin, AS USSR) and the Gosudarstvennyy komitet
Soveta Ministrov SSSR po ispol'zovaniyu atomnoy energii (State Committee
of the Council of Ministers USSR on Utilization of Atomic Energy). More
than 300 physicists and chemists from many cities of the Soviet Union
attended the conference, and about 50 reports on various theoretical and
experimental problems were discussed. Attention was chiefly paid to the
mass, angular, and energy distributions of fission fragments, to the
spontaneous-fission probability, as well as to fission at low and high
excitation energies. B. T. Geylikman reported on the causes of the

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The physics of nuclear fission

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B105/B206

asymmetric mass distribution of fragments, V. M. Strutinskiy and
S. Yukhanson being mentioned in this connection. The following reports
are also mentioned: G. A. Pik-Pichak and V. M. Strutinskiy on the mass,
charge, and energy distributions of fragments; V. V. Vladimirskiy and
V. N. Andreyev on theoretical possibilities in this field; A. N. Protopopov
gave a survey of experimental data on the mass distribution of fragments,
and demonstrated the applicability of A. Bohr's ideas; B. V. Kurchatov and
collaborators reported on the fission of Am^{241} by neutrons of various
energies; A. P. Komar and collaborators reported on the photofission of
Th^{232}; V. P. Eysmont on angular fragment distribution; V. G. Nesterov,
G. N. Smirenkin, and I. I. Bondarenko observed discrete fission channel
spectra in nuclei with odd mass numbers; B. D. Kuz'minov and I. A. Baranov
reported on the correlation of angular and mass asymmetry; Yu.S. Zamyatnin
on the emission of prompt neutrons and γ-rays; M. V. Blinov and
Ye. I. Sirotinin on the measurement and calculation of the spectra of
neutrons which are emitted at given angles to the direction of departure
of the fragments; G. N. Smirenkin and M. V. Blinov on the effect of the
shell structure of fragments upon their shape at the moment of breaking
of the constriction; B. A. Bochagov, A. P. Komar, and K. A. Petrzhak on

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The physics of nuclear fission

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the kinetic energy of fragments; N. A. Perfilov analyzed data on nuclear fission by high-energy particles; A. N. Murin and A. K. Lavrukhina presented new data on nuclear fission by high-energy particles; M. I. Pevzner spoke about problems connected with fission probability at low excitation energies; and V. A. Druin and G. N. Flerov about the investigation of spontaneous-fission probability; N. A. Perfilov, Z. I. Solov'yeva, R. A. Filov, and G. I. Khlebnikov observed spontaneous fission accompanied by α-emission (for Cm^{242}, Pu^{238}, and Pu^{240}); S. M. Solov'yev reported on the investigation of the properties of semiconductor detectors. Such conferences are intended to be held biannually. Measures for improving the organization of activities in the field of the physics of nuclear fission were discussed.

Card 3/3

BARANOV, I.A.; PROTOPOPOV, A.N.; EYSMONT, V.P.

Anisotropy of U^{238} fission by 3 Mev. neutrons. Zhur.eksp.i teor.
fiz. 41 no.4:1003-1006 n '61.   (MIRA 14:10)

1. Radiyevyy institut AN SSSR.
   (Uranium—Isotopes)   (Nuclear fission)   (Neutrons)

PERFILOV, N.A., doktor fiz.-mat. nauk, red.; EYSMONT, V.P., kand. fiz.-
    mat. nauk, red.; VORONOVA, A.I., red.; MAZEL', Ye.M., tekhn.
    red.

[Physics of nuclear fission] Fizika deleniia atomnykh iader;
sbornik statei. Moskva, Gosatomizdat, 1962. 241 p.
                                            (MIRA 15:7)
            (Nuclear fission)

S/089/62/012/001/017/019
B102/B138

AUTHOR: Eysmont, V. P.

TITLE: Conference on fission physics

PERIODICAL: Atomnaya energiya, v. 12, no. 1, 1962, 78 - 80

TEXT: The Soveshchaniye po fizike deleniya atomnykh yader (Conference on the physics of nuclear fission) was held in Leningrad from April 18 - 24. More than 300 scientists took part and about 50 lectures were held. The sessions started with a report by B. T. Geylikman on nuclear models in the problem of fragment mass distribution. G. A. Pik-Pichak and V. M. Strutinskiy spoke on the statistical theory of fission, V. V. Vladimirskiy and V. N. Andreyeva on possibilities of detecting parity nonconservation in strong interactions. The idea is based on the assumption that the threshold for nuclear fission must be lower with nonconservation than with conservation of parity. A. N. Protopopov reviewed experimental data on fragment mass distribution in a lecture. V. P. Eysmont spoke on the symmetry of nuclear fission, A. P. Komar on Th^{232} photofission, V. G. Nesterov, G. N. Smirenkin and I. I. Bondarenko

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Conference on fission physics

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on the angular distributions of U^{233}, U^{235}, Pu^{239} and Pu^{240} fission fragments and V. A. Shigin on that of U^{233}. V. M. Strutinskiy read a paper on the angular anisotropy in fission and B. D. Kuz'minov and I. I. Bondarenko on experiments made to find the relation between the anisotropy, and the mass, energy and spin of fragments (neutron-induced Th^{232} fission). I. A. Baranov et al. have made measurements of this kind for U^{238} bombarded by 3-Mev neutrons. Yu. S. Zamyatin reviewed fragment excitation and emission of prompt neutrons. G. N. Smirenkina and M. V. Blinov spoke on the influence of the shell structure on the shape of fragments, B. T. Geylikman on the relation between fragment mass and the number of emitted neutrons, B. A. Bochagov, A. P. Komar, K. A. Petrzhak et al. on problems of kinetic energy distribution of fragments. N. A. Perfilov gave an analysis of nuclear fission caused by high-energy particles. G. A. Pik-Pichak discussed the relation between fission probability and energy, A. N. Murin, A. I. Obukhov, A. K. Lavrukhina, V. F. Darovskikh et al. presented new data on fissions induced by high-energy particles. M. I. Pevzner gave a review on problems of fission probability when excitation is weak. Results of measurements of heavy-nucleus fission by 10-47-Mev neutrons were dealt with by V. M. Pankratov. V. A. Druin and G. N. Flerov

Card 2/3

Conference on fission physics

S/089/62/012/001/017/019
B102/B138

reviewed problems of spontaneous fission. N. A. Perfilov, Z. I. Solov'yeva, R. A. Filov and G. I. Khlebnikov have observed spontaneous fission of Cm^{242}, Pu^{238} and Pu^{240} with emission of long-range α-particles. S. M. Solov'yev spoke on new semiconductor detectors of fission fragments. A resolution was passed that similar conferences should be held every other year.

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33236
S/089/62/012/002/008/013
B102/B138

24.6600

AUTHORS: Baranov, I. A., Protopopov, A. N., Eysmont, V. P.

TITLE: Comparison of the kinetic energies of the fragments from 3- and 15 Mev neutron-induced U^{238} fission

PERIODICAL: Atomnaya energiya, v. 12, no. 2, 1962, 150 - 151

TEXT: The total kinetic energies and their dispersion were determined in dependence on fragment mass ratios between 1 and 2 for 3-Mev and 15 Mev neutron-induced U^{238} fission, the neutrons coming from $D(d, n)He^3$ and $T(d, n)He^4$ reactions, respectively. A 450 $\mu g/cm^2$ thick U^{238} target was used, the fragment energies were measured with a double ionization chamber via pulse height coincidences. For 3-Mev neutron induced fissions 8000 $\bigvee$ events were observed, for 15 Mev, 20,000. Total kinetic energy of a fragment pair was plotted against the energy ratio for both 3 and 15-Mev neutron-induced fissions. Two almost parallel curves were obtained, the former being about 2 Mev higher than the latter. They had a maximum at about 1.25 mass ratio, at higher ratios total kinetic energy fell almost
Card 1/2

33236
S/089/62/012/002/008/013
Comparison of the kinetic ...   B102/B138

linearly. This result does not agree with calorimetric measurements
which indicate an increase in kinetic energy with increasing nuclear exci-
tation. For dispersion a similar curve was obtained with a maximum at a
ratio of 1.1. Nuclear excitation was thus found to have no effect on the
shape of the fragment energy distribution. Yu. I. Belyanin is thanked for
seeing to the accelerator. There are 2 figures and 9 references: 3 Soviet
and 6 non-Soviet. The four most recent references to English-language pub-
lications read as follows: S. Friedland. Phys. Rev. 84, 75, 1951; J. Wahl,
Phys. Rev., 95, 126, 1954; S. Gunn, H. Hichs. Phys. Rev., 107, 1642, 1957;
P. Stevenson et al. Phys. Rev. 117, 186, 1960.

SUBMITTED: July 28, 1961

Card 2/2

34010
S/056/62/042/001/028/048
B113/B112

24.6500

AUTHOR: Eysmont, V. P.

TITLE: Nuclear fission symmetry

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 42,
              no. 1, 1962, 178-179

TEXT: Various experimental data on elements lighter than thorium show
that nuclear fission is not only asymmetrical. It can further be seen
that the reason of the symmetry lies in the structure of the fissioned
nucleus. In the papers by A. W. Fairhall (Ref. 1) and A. W. Fairhall,
R. C. Jensen and E. F. Neuzil (Ref. 2) lead and bismuth were irradiated
with 22-Mev deuterons and with alpha particles of up to 43 Mev. Their mass
distributions of the fragments were narrow and symmetrical. In the
fission of radium with 11-Mev protons and 22-Mev deuterons the mass
distribution of the fragments has an asymmetrical and a symmetrical part.
The $_{82}Pb^{207, 206, 204}$ and $_{83}Bi^{209}$ nuclei that are close to the doubly
magic $_{82}Pb^{208}$ nucleus have a slight nucleon excess or deficiency with

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3401C
S/056/62/042/001/028/048
B113/B112

Nuclear fission symmetry

respect to the closed shell and show only a slight deviation from the spherical symmetry. The nuclei of the heavy elements contain a larger amount of nucleons outside the closed shell. These nucleons cause a dynamic deviation from the spherical symmetry. In still heavier elements, the number of outer nucleons, which cause a statistical deformation of the nucleus, increases. As soon as saturation with respect to shape is reached a further increase in the number of nucleons does not cause a further increase in deformation. These nuclei comprise thorium and the heavy nuclei with asymmetrical fission. Symmetrical fission takes place in lead and bismuth. The fact that the outer nucleons change the state of the nuclei between lead and thorium explains the change in the fission symmetry in this region. A rapid increase of the fragment of the symmetrical fissions with increasing excitation of the fissioning nucleus can be explained by distortions in the shell structure and by the approach of the nucleus to the state of a liquid drop. R. A. Nobles, R. B. Leachman (Ref. 6) observed experimentally that symmetrical fission in nuclei with a small number of nucleons increases more rapidly outside the closed shell. There are 6 non-Soviet references. The four most recent references to English-language publications read as follows: Ref 1 A. W. Fairhall Phys Rev. 102, 1335, 1956. Ref. 2. A W Fairhall et al Card 2/3

Nuclear fission symmetry

34020
S/056/62/042/001/028/048
B113/B112

Second Un. Nat. Intern. Conf. on the Peaceful Uses of Atomics Energy, Geneva, 1958, P/677. Ref. 5. R. C. Jensen, A. W. Fairhall. Phys. Rev., 118, 771, 1960. Ref. 6. R. A. Nobles, R. B. Leachman. Nucl. Phys. 5, 211, 1958.

SUBMITTED: June 21, 1961

Card 3/3

34011
S/056/62/042/001/029/048
B113/B112

24.6500

AUTHORS: Blinov, M. V., Eysmont, V. P.

TITLE: Nuclear shells and prompt neutrons

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 42,
              no. 1, 1962, 180-182

TEXT: The authors studied the dependence of the number ν of prompt
neutrons on the mass A of the fission fragment. They arrived at the
conclusion that according to the model by V. V. Vladimirskiy (ZhETF, 32,
822, 1957) a great difference has to be expected in the number of the emit-
ted prompt neutrons with strictly symmetrical fission if the light
fragment contains a maximum portion of deformation energy and in the
strongly asymmetrical fission if the heavy fragment contains almost the
entire deformation energy. The experimental data of V. F. Apalin, Yu. P.
Dobrynin, V. P. Zakharova, I. Ye. Kutikov, and L. A. Mikaelyan (Ref. 4:
Atomn. energ., 8, 15, 1959) and S. L. Whetstone (Ref. 2: Phys. Rev. 114,
581, 1959) that were obtained in a study of the dependence $\nu(A)$ in thermal
U^{235} fission and in spontaneous Cf^{252} fission did not confirm these
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Nuclear shells and prompt ...

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S/056/62/042/001/029/048
B113/B112

expectations. It was found that heavy fragments with the mass $A_h \approx 125$-130 and light fragments with the mass $A_l \sim 75$-85 emit a minimum number of neutrons. Their complementary fragments emit a maximum number of neutrons. In regions of almost symmetrical, asymmetrical and strongly asymmetrical fissions ($A_h \approx 160$, $A_l \sim 70$-75) it could be observed that light and heavy fragments emit an almost equal number of prompt neutrons. These results can be explained by assuming that the effect of the closed shells influences the shape of the fragments prior to their definite separation. This effect may be related to the emission of prompt neutrons. For Cf^{252} the numerical difference of the neutrons emitted by the "magic" heavy and the complementary light fragments is much smaller than for U^{233} and U^{235} since for Cf^{252}. The authors thank B. M. Shiryayev and I. T. Krisyuk for discussions. There are 1 figure and 5 references: 3 Soviet and 2 non-Soviet. The two references to English-language publications read as follows: J. S. Fraser, J. C. D. Milten. Phys. Rev., 93, 818, 1954. S. L. Whetstone. Phys. Rev., 114, 581, 1959.

SUBMITTED: June 21, 1961

Card 2/2

40428

S/056/62/043/003/040/063
B108/B102

AUTHORS: Selitskiy, Yu. A., Eysmont, V. P.

TITLE: Two types of nuclear fission

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 43,
             no. 3(9), 1962, 1005 - 1008

TEXT: Various experimental data on the kinetic energy of fragments
resulting from fission of U, Th, Pu etc. by gammas, alphas and thermal
neutrons suggest that two types of fission exist: symmetric fission with
lower energy and asymmetric fission with higher (cf. A. Turkevich,
J. B. Niday. Phys. Rev., 84, 52, 1951). Such a hypothesis would also
explain the large fluctuations in the kinetic energies of the fragments.
Asymmetric fission is a slow process in which the excitation energy is
uniformly distributed to all degrees of freedom of the nucleus. Symmetric
fission is a fast process; the additional excitation energy is imparted
to the translatory degrees of freedom of the fragments. The energy of
symmetric fission increases with increasing excitation energy of the
nucleus. The kinetic energy of the fragments increases with increasing

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Two types of nuclear fission

S/056/62/043/003/040/063
B108/B₁02

energy of the incident particles. This may explain the fact that the fragments of Bi fission by thermal (asymmetric fission) and by 90-Mev neutrons (symmetric fission) have approximately the same energies. There are 2 figures and 1 table.

SUBMITTED: April 2, 1962

Card 2/2

S/056/63/044/002/051/065
B184/3102

AUTHOR: Eysmont, V. P.

TITLE: Two types of fission and the nuclear charge distribution

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 44,
              no. 2, 1963, 744 - 747

TEXT: The experimental data on fission fragment yields and charge distribution is analyzed, and the latest data on prompt neutron emission (ZhETF, 43, 329, 1962) is taken into account. The charge distribution among the fragments, characterized by $y = (C\pi)^{-1/2} \exp[-(Z-Z_p)^2/C]$, is determined for a series of nuclei, and the results are discussed together with those of Wahl et al. (Phys. Rev. 126, 1112, 1962) and Apalin et al. (ZhETF, 43, 329, 1962). $Z_p = Z_p(A)$ is the most probable charge of a fragment of mass A, and C is the half-width of the charge distribution, assumed as Gaussian. The results are shown in the figure; $Z_{ph} - A_h' Z_0/A_c = A_1' Z_c/A_c - Z_{pl}$ is taken as ordinate and $A_h' - 50 A_0/Z_c = A_0(1-50/Z_d) - A_1'$ as abscissa; the subscripts h and l

Card 1/3

Two types of fission and...

refer to heavy and light (fragments), Z_c and A_o are charge and mass of the fissioning nucleus; the solid line gives the empirical Z_p-values obtained by Wahl, the circles denote the Z_p values measured for U^{235} fission induced by 14.5-Mev neutrons. The results indicate that at $A \sim 132$ one may assume the transition from asymmetric to symmetric fission; also the sudden drop in fragment yield and the data on the kinetic energies of the fragments (ZhETF, 43, 1005, 1962) speak in favor of this assumption. The Z_p-curves for symmetric fission should fit the dashed line Z_p/A = const. With C=1.3 and the Z_p values taken from the diagram, the experimental yields of $I^{132,134}$, Cs^{136} and Nb^{97} are well described. For Ag^{112} a value of C = 0.9 would be necessary; 1.3 yields a 100% incorrect value. This can be explained by the two modes of decay: the first-mentioned isotopes are obtained in asymmetric fission, Ag^{112} in symmetric. The deviation from Z_p/A = const is assumed to be governed by the relation $\Delta A_Z = (A/Z)\Delta Z_A$, where ΔZ_A is the charge dispersion at A = const, and ΔA_Z the mass dispersion at Z = const. This

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Two types of fission and...

S/056/63/044/002/051/065
B184/B102

relation was experimentally verified by Blann (Phys. Rev. 123, 1356, 1961)
All results indicate the existence of the two modes of fission, character-
ized by independent Z_p, C_λ mass and charge distributions. There is
1 figure.

SUBMITTED: September 24, 1962

Fig.
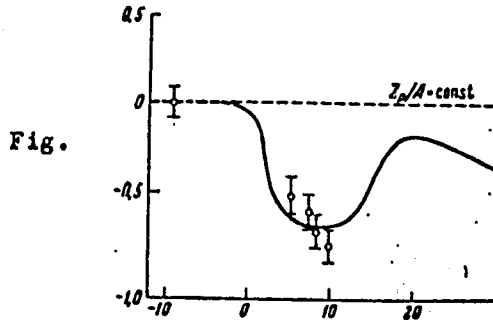
Card 3/3

SELITSKIY, Yu.A.; EYSMONT,V.P.

On the existence of two types of nuclear fission. Zhur. eksp. i
teor. fiz. 43 no.3:1005-1008 '62.   (MIRA 15:10)
                       (Nuclear fission)

EYSMONT, V.P.

Two types of fission and the nuclear charge distribution.
Zhur. eksp. i teor. fiz. 44 no.2:744-747 F '63.
(MIRA 16:7)

L 10199-63   EPR/EPF(c)/EPF(n)-2/EWT(m)/BDS--AFFTC/ASD/AFWL/
SSD--Ps-4/Pr-4/Pu-4--AR/WW/JD/JG   S/0056/63/044/005/1445/1449
ACCESSION NR: AP3000032

AUTHOR: Marov, G. I.; Nemilov, Yu. A.; Selitskiy, Yu. A.; Eysmont, V. P.

TITLE: Fission of uranium and thorium induced by sub-barrier deuterons

SOURCE: Zhurnal eksper. i teoret. fiziki, v. 44, no. 5, 1963, 1445-1449

TOPIC TAGS: Uranium and thorium fission, sub-barrier neutrons, stripping, fragment distribution

ABSTRACT: The absolute fission cross sections of U-233, U-235, U-238, and Th-232 induced by 5.8--6.6 MeV deuterons were measured with a semiconductor detector, and the mechanism of the sub-barrier interaction resulting in the fission of the given nuclei was ascertained. n-type silicon having a resistivity on the order of 150 ohm-cm was used as the detector material. Angular anisotropy of the fragment distribution was disregarded. Simulatenously with registration of the fission events, pulses were fed to a 128-channel pulse-height analyzer for the determination of the fragment energy spectra. The fissions induced by the background neutrons did not exceed 20%. For 6.6 MeV deuterons, the cross

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L 10199-63
ACCESSION NR: AP3000032

sections were found to be 0.15, 0.16, 0.75, and 1.2 millibarns for Th-232,
U-238, U-235, and U-233, respectively, with 10% accuracy. The investigation of
the fragment kinetic-energy distributions and the analysis of the fission cross
sections indicate that Th-232 and U-238 undergo fission mainly following
deuteron capture, but that at least 70% of the U-235 and U-233 fission events
are preceded by stripping. "The authors are indebted to S. A. Karamyan for
assistance." Original article has: 2 figures, 4 formulas, and 1 table.

ASSOCIATION: none

SUBMITTED: 12Nov63   DATE ACQ: 12Jun63   ENCL: 00

SUB CODE: PH   NR REF SOV: 001   OTHER: 007

bm/
Card   2/2

L 45188-65 EWT(m)/EWA(h)' Peb

ACCESSION NR: AP5009822   UR/0367/65/001/002/0185/0188

AUTHORS: Eysmont, V. P.; Yurgenson, V. A.

TITLE: Search for positron emitters among the products of U-235 thermal neutron fission

SOURCE: Yadernaya fizika, v. 1, no. 2, 1965, 185-188

TOPIC TAGS: uranium fission, thermal neutron fission, fission fragment charge distribution, positron emission

ABSTRACT: The purpose of the investigation was to check on the hypothesis fragments of equal mass but of unequal charge can be produced in U^{235} thermal-neutron fission which is symmetrical in the mass distribution. A U^{235} target of thickness 120 $\mu g/cm^2$ deposited on a polished aluminum substrate was irradiated in a reactor and the positron emission from the collected fission products was observed by simultaneously counting the annihilation gamma quanta.

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L 45188-65

ACCESSION NR: AP5009822   2

By observing the $\gamma\gamma$ coincidences corresponding to the annihilation
radiation, it was established that the upper limit of the number of
positron emitters is substantially less (not more than 1% of the
total counts) than the number expected on the basis of the above
hypothesis. A similar conclusion was reached recently by A. C.
Wahl and D. R. Nethaway by using a different technique. "The
authors thank M. V. Blinov for useful advice and V. P. Zykov for
major assistance." Orig. art. has: 2 figures.

ASSOCIATION: None

SUBMITTED: 26Aug64   ENCL: 00   SUB CODE: NP

NR REF SOV: 003   OTHER: 004

bjo
Card 2/2

NEMILOV, Yu.A.; PAVLOV, V.V.; SELITSKIY, Yu.A.; SOLOV'YEV, S.M.·
    EYSMONT, V.P.

    Distribution of the masses and kinetic energies of fragments in the
    fission of Th^{232} by 12 Mev. deuterons. IAd. fiz. 1 no.4:633-638 Ap
    '65.   (MIRA 18:5)

L 64368-65   EWT(m)/EFF(n)-2/EWP(t)/EWP(b)/EWA(h)   IJP(c)   JD/WH/JG/DM
ACCESSION NR: AP5014534   UR/0089/65/018/005/0456/0459

539.172.13 + 539.17.015

AUTHOR: Nemilov, Yu. A.; Pavlov, V. V.; Selitskiy, Yu. A.; Solov'yev, S. M.;
Eysmont, V. P.

TITLE: Total and differential cross sections for the fission of uranium and
thorium by low-energy deuterons

SOURCE: Atomnaya energiya, v. 18, no. 5, 1965, 456-459

TOPIC TAGS: uranium, thorium, fission cross section, subbarrier deuteron, total
cross section, differential cross section, fission fragment detection

ABSTRACT: By registering the fission fragments with glass plates, the authors
were able to determine the total and differential cross sections for the fission
of Th^{232}, U^{233}, U^{235}, and U^{238} by deuterons of energy much lower than the Coulomb
barrier (6.6 MeV and below). Ordinary photographic plates were used, the emulsion
serving as a protection for the surface. The targets were made by evaporating
fluorides of uranium and thorium on thin silver substrates. The deuterons were ac-
celerated in a cyclotron and their energy was determined accurate to 0.1 MeV. The
experimental set-up is illustrated in Fig. 1 of the Enclosure. The results are
compared with published data in which the cross sections have been obtained with

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L 64368-65
ACCESSION NR: AP5014534   ○

semiconductor detectors at larger deuteron energies. The differential cross sec-
tions of all nuclei varied smoothly within a narrow range at the investigated deu-
teron energies. The anisotropy of the angular distribution was quite smooth in
all cases, except that for U^{235} the angle distribution of the fragments had a max-
imum not at 0° but at 90° to the beam. Although the results did not differ greatly
from those obtained by others, it is indicated that the reactions preceding fission
of nuclei having different neutron fission thresholds and bombarded by subbarrier
deuterons may differ noticeably from those at higher energies. Orig. art. has:
4 figures and 1 table.

ASSOCIATION: none

SUBMITTED: 23Jun64   ENCL: 01   SUB CODE: NP

NR REF SOV: 005   OTHER: 006

Card 2/3

L 64368—65
ACCESSION NR: AP5014534
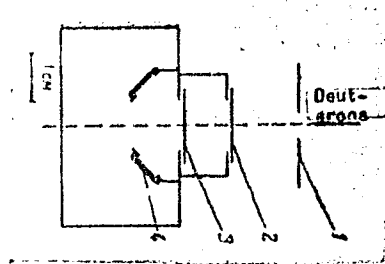
Fig. 1. Setup for the measurement of fission cross sections:

1 - Diaphragm, 2 - foils for the measurement of deuteron energy, 3 - target, 4 - glass plate to register the fission fragments.

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L 5077-66   EWT(m)/EPF(n)-2/EWA(h)   DM
ACC NR: AP5022626   UR/0089/65/019/002/0113/0116
                                     539.125.5:539.173.7

AUTHOR: Eysmont, V. P.   23
                                                               B
TITLE: Fission neutrons of excited nuclei

SOURCE: Atomnaya energiya, v. 19, no. 2, 1965, 113-116

TOPIC TAGS: neutron, neutron energy distribution

ABSTRACT: In the calculations, it is usually assumed that the
emission of neutrons is originated by fully accelerated fission frag-
ments. The author attempts to evaluate the correctness of such an
assumption, especially when applied to high-excitation energies. For
this purpose, the time needed for fission fragments to attain the full
velocity is calculated by the author, and then compared with the
nucleus half-life from the standpoint of neutron emission. The author
assumes that in case of nucleus excitations of 20 Mev and over, a cer-
tain number of neutrons can be emitted before the full acceleration is
reached. Such a possibility of partial neutron emission becomes
greater with the increase of the excitation energy. Such an approach
permits him to explain and eliminate certain contradictions existing in
the interpretation of experimental data. It is stressed that the new

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L 5077-66

ACC NR: AP5022626   O

methods used for determination of neutron dependence upon the mass of
fragments cannot be regarded as a reliable technique for investigating
high-energy fission processes. They are usually based on the compari-
son of energies and velocities of fission fragments and no allowance is
made for the number of neutrons emitted from the non-fully accelerated
fragments. The author's discussions, calculations, and conclusions
were made on the basis of numerous publications, mostly of foreign
origin. Orig. art. has: 7 formulae and 1 graph.

ASSOCIATION: None

SUBMITTED: 28Jul64   ENCL: 00   SUB CODE: NP

NO REF SOV: 005   OTHER: 014

Card 2/2 md

L 13172-66   EWT(m)/EWA(h)

ACC NR: AP6001152   SOURCE CODE: UR/0367/65/002/003/0460/0465

AUTHOR: Nemilov, Yu. A.; Selitskiy, Yu. A.; Solov'yev, S. M.; Eysmont, V. P.

ORG: None

TITLE: The angular anisotropy of fission by sub-barrier deutrons

SOURCE: Yadernaya fizika, v. 2, no. 3, 1965, 460-465

TOPIC TAGS: nuclear fission, fission product, deutron bombardment, uranium, plutonium, angular distribution

ABSTRACT: This article presents the results of new measurements of the angular distribution of fission products for the fission of heavy nuclei by deutrons of various energies (below the Coulomb barrier). Specific details are given for U^{235} and Pu^{239}, and deutron energies between 5.7 and 12.1 Mev. It is found that the angular distributions are appreciably anisotropic and that the energy dependence of the anisotropy of the odd-even nuclear targets has certain significant features. For example, for Pu^{239} the anisotropy increases with a decrease in deutron energy, whereas for U^{235} it decreases and passes into the region of "negative" values ($\partial f (0°) /\partial f (90°) < 1$). The significant features indicated are interpreted as the result of the specific feature of the interaction of low-energy deutrons with heavy nuclei. In conclusion, the authors note that, given data more precise than that available at present, the results of the present work may be employed for the calculation of the moments of inertia at the saddle point for nuclei which differ from those studied earlier according to the nucleon composition and excitation energy. Orig. art.

Card 1/2

L 13172-66

ACC NR: AP6001152

has: 4 figures.

SUB CODE: 18/ SUBM DATE: 20Feb65/ ORIG REF: 011/ OTH REF: 009

Card   2/2

L 37087-66   EWT(m)

ACC NR: AP6016809   (N)   SOURCE CODE: UR/0367/66/003/001/0065/0072

AUTHOR: Selitskiy, Yu. A.; Solov'yev, S. M.; Eysmont, V. P.   *36*

ORG: none   *19*   *B*

TITLE: Characteristics of the fission of Th^{232} by deuterons and the dependence of the kinetic energy of the fragments on the excitation energy of the fissioning nuclei

SOURCE: Yadernaya fizika, v. 3, no. 1, 1966, 65-72

TOPIC TAGS: thorium, fission product, nuclear fission, deuteron reaction, kinetic energy, excitation energy

ABSTRACT: To obtain further information on the dependence of the kinetic-energy distribution of fission fragments on the excitation energy, the authors have undertaken a comparison of the properties of mass and kinetic-energy distributions of Th^{232} fissioned by 9 and 12.1 Mev deuterons. The energies of paired fission fragments were measured with previously described semiconductor-detector apparatus (YaF v. 1, 677, 1965). Approximately 10,000 fragment pairs were registered for each value of the deuteron energy. The measurements yielded the fragment mass distribution, the average fragment energies, and the dispersion of the determined masses, as well as the distributions for the kinetic energy at fixed masses. The results, together with data obtained by others, are analyzed from the point of view of the model of "nuclear shells in fragments" and the postulated existence of two independent types of fission (symmetrical and asymmetrical). It is shown that if the model of two types of

Card   1/2

KUDRYASHOV, Nikolay Nikolayevich; EYSYMONT, L.O., red.; TUMANOVSKIY, R.F.,
tekhn. red.; GORINA, V.A., tekhn. red.

[How to shoot and project motion pictures; practical manual for
amateur motion-picture photographers] Kak samomu sniat' i po-
kazat' kinofil'm; prakticheskoe rukovodstvo dlia kinoliubitelia.
Izd.3., perer. i dop. Moskva, Gos. izd-vo "Iskusstvo," 1961.
319 p.   (MIRA 14:9)
(Amateur motion pictures)

GOLDOVSKIY, Yevsey Mikhaylovich, prof.; EYSYMONT, L.O., red.; MALEK,
Z.A., tekhn. red.

[Principles of the wide-film cinematography]Printsipy shi-
rokoformatnogo kinematografa. Moskva, Iskusstvo, 1962.
210 p.   (MIRA 15:11)
          (Motion pictures)

BURGOV, Vyacheslav Alokseyevich, prof., doktor tekhn. nauk;
       EYSYMONT, L.O., red.

       [Principles of television broadcasting of films] Osnovy
       kinotelevizionnoi tekhniki. Moskva, Iskusstvo, 1964. 612 p.
                                                (MIRA 18:10)
       1. Zaveduyushchiy kafedroy zapisi i vosproizvedeniya signalov
       Leningradskogo instituta kinoinzhenerov(for Burgov).

EYSMONT, V. V.

"Morphological composition of blood in epizootic lymphangitis of horses." /Report./
Veterinariya, No. 11, 1949, pp 30-31
(1949 Letopis' Zhurnal'nykh Statey, No. 45, item 33394)   Uncl

KONDYURIN, N.G.; EYSMONT, V.V.

Mycotic infections of horses in Siberia. Veterinariia 35 no.5:121-122)
My '58.   (MIRA 12:1)

1. Omskiy veterinarnyy institut.
(Omsk Province--Veterinary mycology)
(Horses--Diseases and pests)

BEL'KOV, N.F., dots.; MYSMONT, V.V., dots.; SHPRINBAKH, O.G., vetvrach.

Animals with prolonged postvaccinal reaction as hosts for brucellosis.
Veterinariia 36 no.12:26-29 D '59.   (MIRA 13:3)

1.Omskiy veterinarnyy institut (for Bel'kov, Mysmont). 2.Omskaya
oblastnaya vetbaklaboratoriya (for Shprinbakh).
                    (Brucellosis in cattle)

EYSNER, Aleksey Vladimirovich; VINNIKOVA, G.E., red.; KRYUCHKINA,
L.P., tekhn. red.

[My sister Bulgaria; sketches] Sestra moia Bolgariia; ocherki.
Moskva, Sovetskii pisatel', 1963. 213 p.   (MIRA 16:9)
            (Bulgaria--Description and travel)

1. F. F. EYSNER

2. USSR (600)

4. Cattle Breeding

7. Using bull sires of collective farm sections that produce for the market.
   Sots. zhiv. 15 no. 2. 1953.

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

COUNTRY   : USSR
CATEGORY   : Farm Animals.   Q
               Cattle.

ABS. JOUR.   : RZhBiol., No. 6, 1959, No. 26823

AUTHOR   : Eysner, F. F.
INST.   :
TITLE   : Increasing the Milk's Fat Content in Cows.

ORIG. PUB.   : Sots. tvarinnitstvo, 1958, No 1, 26-31

ABSTRACT   : The most important measures for raising the
               milk's fat content in cows are the level of
               protein nutrition when raising heifers and
               feeding lactating and pregnant cows, crossing
               animals which descended from ancestors with
               a high fat content of milk, and evaluating the
               milk's fat content of sires according to their
               progeny. -- B. I. Kazachek

Card: 1/1

EYDRIGEVICH, Yevgeniy Vladislavovich [Eidryhevych, IE.V.], prof., doktor
        sel'skokhoz.nauk; EYSNER, F.F., kand.sel'skokhoz.nauk, glavnyy red.

     [How breeds of farm animals are produced and improved] IAk stvo-
     riuiut'sia ta udoskonaliuiut'sia prody sil's'kohospodars'kykh
     tvaryn. Kyiv, 1959. 39 p. (Tovarystvo dlia poshyrennia poli-
     tychnykh i naukovykh znan' Ukrains'koi RSR. Ser.4, no.14)
                                     (MIRA 12:12)

        (Stock and stockbreeding)

EYSNER, F.F.

        [Evaluation and selection of herd bulls] Otsinka i dobir
buhaiv-plidnykiv. Kyiv, Derzh.vyd-vo sil's'kohospodars'koi
lit-ry URSR, 1959. 91 p.   (MIRA 15:8)
              (Bulls)

EYSNER, F.F.; SIDOROSHEVSKAYA, TS.M.

Relation between the activity of the thyroid gland and milk
productivity in cattle. Zhur.ob.biol. 20 no.3:194-201
My-Je '59.   (MIRA 12:8)

1. Research Institute of Animal Breeding of the Forest Steppe
and the Wooded Districts of the Ukrainian S.S.R., Kharkov.
          (THYROID GLAND)   (LACTATION)   (COWS)

EYSHER, F.F., kand.sel'skokhozyaystvennykh nauk

Some problems in utilizing heterosis in stockbreeding. Zhivotnovod-
stvo 21 no.6:32-36 Je '59.   (MIRA 12:8)

1. Nauchno-issledovatel'skaya institut zhivotnovodstva lesostepi
i Poles'ya USSR.
        (Heterosis) (Stock and stockbreeding)

EYSNER, F.F., kand.sel'skokhozyaystvennykh nauk

Judging herd sires by their ancestry. Zhivotnovodstvo 21 no.8:45-51
Ag '59.   (MIRA 12:11)

1. Nauchno-issledovatel'skiy institut zhivotnovodstva lesostepi i
Poles'ya Ukrainy.
                    (Bulls)   (Stockjudging)

ZORIN, Ivan Gerasimovich [Zorin, I.H.]; SMIRNOV, Igor' Vasil'yevich
[Smyrnov, I.V.]; EYSNER, Fedor Fedorovich [Eisner, F.F.]; MA-
ZUR, V.M., red.; MANOYLO, Z.T. [Manoilo, Z.T.], tekhn. red.

[Artificial insemination of livestock together with breeding
principles] Shtuchne osimeninnia sil'skohospodars'kykh tvaryn
z osnovamy pleminnoi spravy. Kyiv, Vyd-vo Ukrains'koi akade-
mii sil'skohospcdars'kykh nauk, 1960. 253 p. (MIRA 14:12)

1. Chlen-korrespondent Ukrainskoy akademii sel'skokhozyaystven-
nykh nauk (for Zorin).
    (Artificial insemination) (Stock and stock breeding)

EYSNER, F.F., kand.sel'skokhozyaystvennykh nauk

    Methods for evaluating bull sires. Agrobiologiia no. 3:426-431
    My-Je '61.   (MIRA 14:5)

    1. Nauchno-issledovatel'skiy institut zhivotnovodstva lesostepi
    i Poles'ya Ukrainy, g. Khar'kov.
                    (Bulls)

DANILENKO, I.A.; EYSNER, F.F., kand. sel'skokhozyaystvennykh nauk

    Experimental farm helps to solve the current problems of the
    development of animal husbandry. Zhivotnovodstvo 23 no.3:80-82
    Mr '61.   (MIRA 17:1)

    1. Nauchno-issledovatel'skiy institut zhivotnovodstva lesostepi
    i Poles'ya UkrSSR. 2. Chlen-korrespondent Vsesoyuznoy akademii
    sel'skokhozyaystvennykh nauk i Ukrainskoy akademii sel'skokho-
    zyaystvennykh nauk (for Danilenko).

EYSNER, I.Ya.

Experiments with light. Fiz.v shkole no.6:39-41 '53.   (MIRA 6:10)

1, Gorod L'vov, Pedagogicheskiy institut.   (Diffraction)
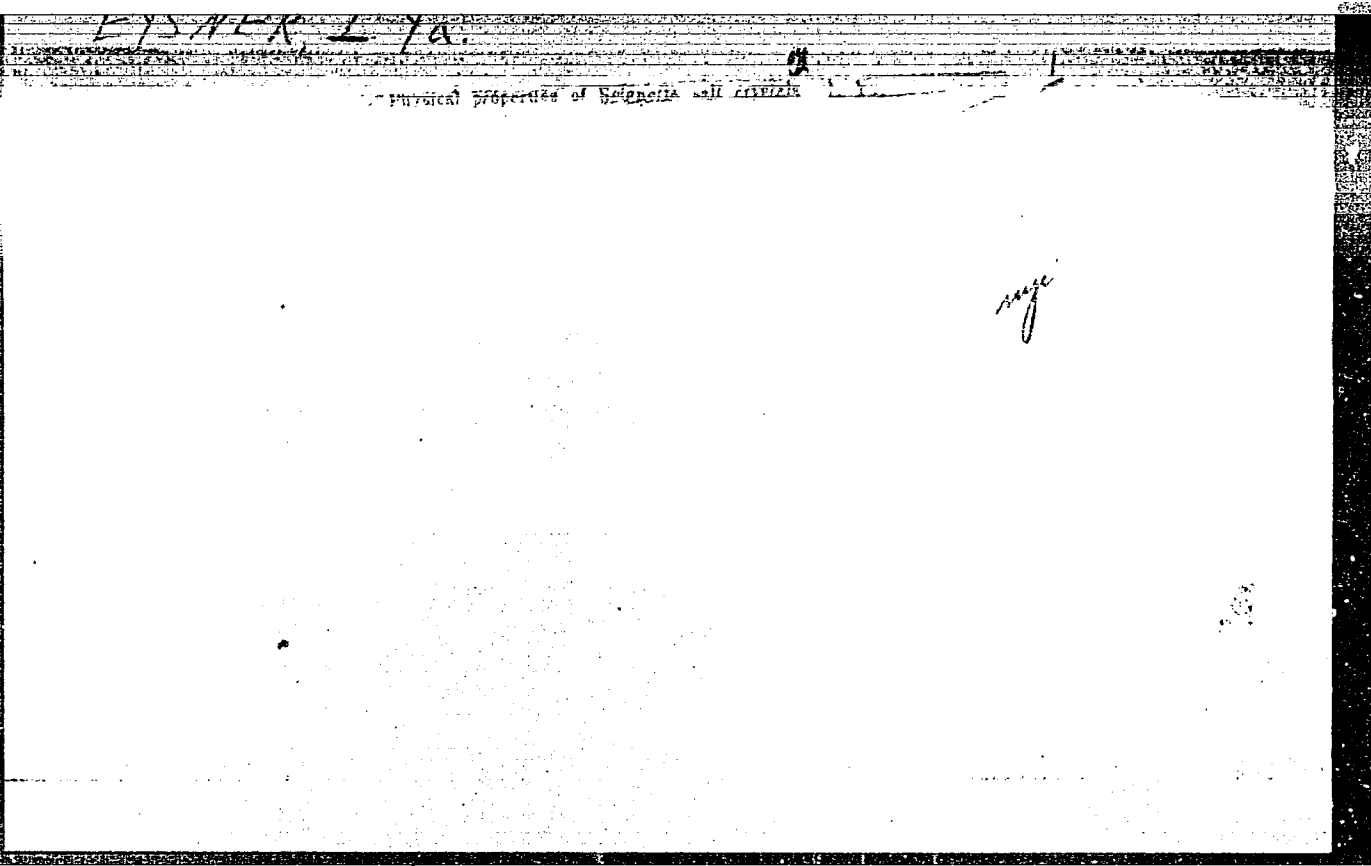
EYSNER, I·Yu.

YEYSNER, I.Ya.

Experiments on electric discharges with incandescent lamps. Fiz.v shkole
13 no.5:43-44 S-O '53.   (MLRA 6:8)

1. Pedinstitut, L'vov.   (Electric discharges)

FISHER, I. Ya.

Physical properties of Solonetz soil mixture

EYSNER, I.YA

Category : USSR/Electricity - Dielectrics   G-2

Abs Jour : Ref Zhur - Fizika, No 1, 1957 No 1533

Author   : Eysner, I.Ya.
Title   : On Certain Physical Properties of Rochelle-Salt Crystals

Orig Pub : Izv. AN SSSR, ser. fiz., 1956, 20, No 2, 215-218

Abstract : The effect of impurities on the dielectric constant ε and on the dielectric
           losses in Rochelle salt crystals is investigated. The presence of B, Cu, Mo
           ions in Rochelle salt changes its habit and its electric properties. The tem-
           perature dependence of ε is not changed by the impurities, but the Curie points
           T_C are shifted and decrease the region of spontaneous polarization. In the
           spontaneous-polarization region the maximum of $\tan\delta$ is reduced considerably
           compared with the maximum $\tan\delta$ of pure Rochelle salt. In the spontaneous-
           polarization region, the values of ε and $\tan\delta$ vary more smoothly with increas-
           ing electric field intensity compared with pure Rochelle salt.

Card   : 1/1

AUTHOR: Eysner, I.Ya.   70-2-19/24

TITLE: On certain changes in the dielectric properties of
          Rochelle salt on irradiation with X-rays. (O nekotorykh
          izmeneniyakh dielektricheskikh svoystv kristallov segnet-
          ovoy soli, obluchennykh rentgenovskimi luchami)

PERIODICAL: "Kristallografiya" (Crystallography), 1957, Vol.2,
                          No.2, pp. 296-299 (U.S.S.R.)

ABSTRACT: X-cut plates of Rochelle salt were irradiated for
          10-50 hours 5 cm from the window of a tube operating with
          an Fe target at 30 kV and 10 mA. The curves of dielectric
          constant against temperature over the range -20 to +30 C
          were normal in shape but the d.c. was reduced uniformly to
          40% for the specimen irradiated for 40 hours and pro rata for
          the others. Tests were made at 50 c/s at 20 V/cm field. At
          1 000 V/cm some field dependence was found. Tests at 1/2-5
          Mc/s showed little difference between irradiated and unirradi-
          ated specimens indicating that radiation affects only the
          slow-acting mechanism of polarisation. Estimates of coerci-
          vity of specimens irradiated for 15 hours made from hysteresis
Card 1/2 loops were about 60 V/cm and the residual polarisation was
          54 CGS units at the maximum reached at 8 C in the range
          -16 to 26 C.

On certain changes in the dielectric properties of Rochelle 70-2-19/24
salt on irradiation with X-rays. (Cont.)

There are 2 figures and 4 references, 3 of which are Slavic.

ASSOCIATION: Lvov Pedagogical Institute (L'vovskiy Pedagogicheskiy
Card 2/2   Institut)

SUBMITTED: February 1, 1957.

AVAILABLE: Library of Congress

Eysner, I. Ya

SUBJECT: USSR/Luminescence   48-3-6/26

AUTHOR: Eysner I.Ya.

TITLE: On Some Peculiarities in Dielectric Hysteresis of the Seignette's
              Salt (O nekotorykh osobennostyakh dielektricheskogo gisterezisa
              segnetovoy soli)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Seriya fizicheskaya, 1957, Vol 21,
              #3, pp 334-339 (USSR)

ABSTRACTS: The phenomenon of dielectric hysteresis of the Seignette's salt
              with admixtures has been investigated by means of a cathode
              oscillograph according to a method developed by Sawyer and
              Tower (1).

              Conclusions to be drawn from these investigations are as follows:

              1. Crystals of Seignette's salt containing admixtures of Mo, B
              or Cu, which were investigated in alternate current at a frequen-
              cy of 50 c/s and intensities of the order of 700 v/cm, show di-
              electric hysteresis but their loops differ from those of pure
              Seignette's salt crystalls.

Card 1/3

48-3-6/26

TITLE: On Some Peculiarities in Dielectric Hysteresis of the Seignette's
           Salt (O nekotorykh osobennostyakh dielektricheskogo gisterezisa
           segnetovoy soli)

2. Crystals of Seignette's salt grown out of its solution in
the presence of ammonium molybdate show only slight dielectric
losses in strong electric fields. A non-linear dependence of
polarization on electric field intensity is observed between the
Curie points.

3. Crystals of Seignette's salt with a B-admixture grown out
of a saturated solution show anomalous hysteresis loops, narrowed
down in the region of low intensities of the electric field. This
loop deformation can be interpreted as a result of inhibiting
the process of domain re-orientation by the admixtures.

4. Crystals of Seignette's salt with a Cu admixture show a
strong anomaly of dielectric hysteresis loop, where polarization
at first is a linear function of intensity, and only beyond a
certain value of field intensity does the hysteresis loop arise.

5. The dependence of dielectric permittivity of Seignette's
salt crystals with admixtures of Mo, B and Cu on temperature in
strong electric fields was determined by hysteresis loops.

Card 2/3

EYSHER, I.Ya.

Characteristics of the growth of Seignette salt monocrystals
from admixed solutions. Min.shor. no.11:329-334 '57.
(MIRA 13:2)

1. Pedagogicheskiy institut, L'vov.
    (Postassium sodium tartrate crystals)

EYSNER, I.Ya., Cand Phys-Math Sci -- (diss) "On certain
peculiarities of the dielectric properties of monocrystals
of Seignette's salt." L'vov,1958. 11 pp with graphs. (Min of
Higher Education UkSSR. L'vov State U im lvan Franko.) 150 copies.
(KL, 12-58, 96)

-17-

EYSNER, I.Ya.

      Luminescence analysis of Transcarpathian carpathite and
      curtisite. Min.sbor. no.14:369-371 '60.   (MIRA 15:2)

    1. Pedagogicheskiy institut, L'vov.
                 (Transcarpathia—Carpathite)
                 (Transcarpathia—Curtisite)

85870

24,7700 (1043,1143)
9,2180 (3203, 1162)

S/048/60/024/011/006/036
B006/B056

AUTHOR: Eysner, I. Ya.

TITLE: Some Electrical Characteristics of Ammonium Dihydro-
             phosphate Monocrystals

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1960,
             Vol. 24, No. 11, pp. 1326 - 1328

TEXT: The present paper is a reproduction of a lecture delivered on the
3rd Conference on Ferroelectricity, which took place in Moscow from
January 25 to 30, 1960. Investigations of the $\varepsilon(t)$-curves of ammonium
dihydrophosphate (ADP) have a limit at -125°C because of the destruction
of the ADP crystal. Some data concerning the changes occurring in ADP
at critical temperature may be obtained by investigating the transparen-
cy of the crystals. The author arranged an ADP monocrystal between a
photoelement and a source of white light in a cryogenic device and mea-
sured the photocurrent while the crystal was cooled from 0 to -180°C.
At -125°C the transparency (measured by I/I', the ratio of the photo-
current without and with ADP) changed very abruptly from 0.85 to 0.05

Card 1/2

85870

Some Electrical Characteristics of Ammonium   S/048/60/024/011/006/036
Dihydrophosphate Monocrystals   B006/B056

(Fig.1). This is explained by a phase transition from the tetragonal
to the orthorhombic modification. The author measured ε and tan δ at
50 cps in fields of 3000-10,000 v/cm in the axes X, Y, and Z in pure
ADP monocrystals. The measured results are discussed and partly il-
lustrated; Fig.2 shows $\varepsilon_x(t)$, Fig.3 shows $\varepsilon_z(t)$. ε_x and ε_z at first grow
monotonically when cooled and attain 97 and 35, respectively. At -125°C
they drop to 15 and 12, respectively, and continue to fall with further
cooling (to 9-10). The crystals showed a temperature hysteresis, i.e.
when heated, the abrupt rise of ε began later, without, however, at-
taining the original value during this rise. Further heating was fol-
lowed by a monotonic decrease of ε. tan δ decreased quickly from 0.2
at room temperature to 0.001-0.0001 at temperatures below zero, which
is explained by a rapid decrease of the impurity conductivity. An in-
vestigation of artificially impurified ADP crystals shows that the lat-
ter, while influencing the ε and tan δ values, do not influence the
position of the phase transformation temperature. The X-ray examinations
for this paper were made by I. V. Kavich of the kafedra kristallografii
L'vovskogo universiteta (Chair of Crystallography of L'vov University).
There are 3 figures and 6 references: 1 Soviet, 3 US, and 2 Swiss.

Card 2/2

15172-63
Pt-4   JD/IJP(C)   EWT(1)/EWP(q)/EWT(m)/BDS/ES(s)-2.   AFFTC/ASD/ESD-3/SSD

ACCESSION NR: AR3003339   S/0058/63/000/005/E066/E066

SOURCE: RZh. Fizika, Abs. 5E415   67

AUTHOR: Eysner, Y. Ya.

TITLE: Piezoelectric effect in single crystals of Rochelle salt with anomalous dielectric hysteresis loop

CITED SOURCE: Nauk. zap. Drohobyts'k. derzh. ped. in-t, vy*p. 8, 1962, 24-30

TOPIC TAGS: piezoelectric effect, Rochelle salt, single crystal, anomalous dielectric hysteresis, copper additive, x-irradiation

TRANSLATION: The direct piezo-effect in single crystals of Rochelle salt (RS) to which copper ions were added was investigated, and also the effect after irradiation for 30 hours by Fe-radiation from a BSV X-ray tube. The RS crystals were grown from an aqueous solution to which 2 per cent of copper acetate was added. The objects of the investigation were X-cut samples, cut from a growth pyramid of the (210) face, characterized by the largest amount of intruded copper. The piezoelectric modulus d_{14} was measured by a static method in the temperature interval from -20 to 30°C at compression stresses σ of 3—8 and 50—80 kg/cm², applied to the

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ACCESSION NR: AR3003339   0

YZ plane of rectangular plates, cut perpendicular to the X axis at a 45° angle to
the Y and Z axes. In addition, the piezoelectric polarization P_k was measured in
the temperature interval between the Curie points. At small δ , the value of d_{14}
is smaller for RS with copper than for pure RS, and an increase to 70 kg/cm^2 leads
to a decrease in the difference between the two values. The characteristics of the
RS (Cu) specimens, annealed at 40° for 26 hours, also approached the characteristics
of pure RS. Such a behavior is characteristic of the irradiated specimens of RS.
The results obtained are attributed to the fact that the irradiated RS crystals and
the RS(Cu) crystals are characterized, compared with the initial RS, by a larger
stability of the main structure with respect to the external force field. S. P.
Solov'yev

DATE ACQ: 17Jun63   SUB CODE: PH   ENCL: 00

Card 2/2

EYSNER, I.Ya.

Further on the domain structure of Rochelle salt single crystals.
Kristallografiia 9 no.1:111-113 Ja-F '64.   (MIRA 17:3)

1. Drogobychskiy pedagogicheskiy institut im. Iv.Franko.

L 7822-66   EWT(l)/EWT(m)/EPA(s)-2/EPF(c)/EPF(n)-2   IJP(c)   GG:

ACC NR: AP5028109   SOURCE CODE: UR/0048/65/029/011/2014/2016

AUTHOR: Eysner, I.Ya.

ORG: Drogobych Pedagogical Institute im. Ivan Franko (Drogobychskiy pedagogicheskiy institut)

TITLE: Some electronic effects in Rochelle salt crystals/Report, Fourth All-Union Conference on Ferro-electricity held at Rostov-on-the Don 12-16 September 1964/

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v. 29, no. 11, 1965, 2014-2016

TOPIC TAGS: ferroelectric crystal, single crystal, gamma irradiation, IR absorption, electric conductivity, electron emission

ABSTRACT: The author has measured the infrared absorption, the electric conductivity, and the exoelectron emission of $22 \times 25 \times 0.13$ mm^3 γ-irradiated X-cut Rochelle salt crystal plates. The crystals were dosed with 2 to 4 Mr of - radiation at the rate of 0.45 Mr/hour. The irradiation increased the general infrared absorption of the crystals and produced a very prominent absorption peak at 2.4μ. The increased absorption is ascribed to radiation defects and an impurity activation energy of 0.5 eV was calculated from the 2.4μ peak. The irradiation increased the electric conductivity with time, observed in unirradiated crystals by the technique described by V.M.Gurevich, I.S.Rez, and I.S.Zheludev (Fiz. tverdogo tela, 2, No. 4, 673, 691 (1960)), was not found in the

Card 1/2

L 7822-66

ACC NR: AP5028109

irradiated materials. The conductivity of an irradiated crystal increased with increasing temperature from 4.7 x 10^{-12} mho/cm at 23°C to 5.5 x 10^{-12} mho/cm at 45°C. Exoelectron emission from irradiated crystals was observed with a Geiger-Muller counter and an extinction curve is presented. The large scattering of the experimental points, however, indicates that the extinction rate of exoelectron emission is not a characteristic parameter of the investigated specimens. No change of emission intensity under mechanical stress could be found. Orig. art. has: 4 figures.

SUB CODE: SS,EM,OP   SUBM DATE: 00/   ORIG. REF: 007   OTH REF: 002

nw

Card 2/2

EYSSELT, M.

Normal growth of Walker's tumor; a statistical and graphic demonstration of the
normal growth of tumors. p. 57
CESKOSLOVENSKA BIOLOGIE, Vol. 4, No. 1, Jan. 1955

EYSSELT, Milos

Changes in the electrophoretic data after iodation of the serum
proteins. Scr. med. fkc. med. Brunen. 35 no.1/2:11-18 '62.

1. Katedra patologicke fysiologie -- oddel. nuklearni mediciny
lekarske fakulty university J.E. Purkyne v Brne.
        (ELECTROPHORESIS)   (BLOOD PROTEINS chem)
                (IODINE radioactive)

EYSSELT, M.; DOHNALEK, J.

Economic method of decontamination of clothes after contamination with Ra^{226} and its disintegration products. Cesk. hyg. 8 no.5: 273-277 Je '63.

1. Katedra radiologie a nuklearni mediciny lekarske fakulty UJEvP, Brno.
          (CLOTHING)   (TEXTILES)   (RADIUM)
          (RADIATION PROTECTION)   (DECONTAMINATION)
              (CITRATES)   (EDATHAMIL)

EYSSELT, Milos

Our experiences with preparation of labelled o-iodohippuric
acid. Scr. med. fac. med. Brunensis 36 no.7:313-322 '63.

1. Katedra radiologie a nuklearni mediciny lekarske fakulty
University J.E.Purkyne v Brne. Prednosta Prof. MUDr. Jiri
Holy, DrSc.

EYSSELT, Milon

Labeling of o-iodobenzoic acid with radioiodine. Scr. med. fac. med. Brunensis 38 no.4:173-179 '65.

1. Katedra radiologie a nuklearni mediciny lekarske fakulty University J.E. Purkyne v Brne (prednosta prof. MUDr. Jiri Holy, DrSc.).

CZECHOSLOVAKIA

DOHNALEK, J.; EYSSELT, M.; MARTINEK, K.; POLASKOVA, A.

1. Dept. of Radiology and Nuclear Medicine, Faculty of Medicine,
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Brno (for ?)

Brno, <u>Vnitrni lekarstvi</u>, No 11, November 1966, pp 1056-1060

"Detoxication of o-iodbenzoic acid-I^{131} in some hepatic and renal diseases."