KOMAR, A.P.; KOVARZH, Z.

Isothermic gamma calorimeter. Zhur.tekh.fiz. 31 no.1:116-124 Ja '61. (MIRA 14:2)

1. Fiziko-tekhnicheskiy institut AN SSSR, Leningrad.
(Gamma rays) (Calorimeters)

USSR, A.P., akademik

Research on the structure of atomic nuclei. Vest. AN SSSR 21 no. 2:64-68 F '51. (MIRA 14:2)

1. AN USSR.

(Nuclei, Atomic)

S/057/61/031/002/012/015
B124/B202

26.2340

AUTHORS: Komar, A. P. and Komar, A. A.

TITLE: Molecules and complexes of molecules and atoms as waveguides for electron waves

PERIODICAL: Zhurnal tekhnicheskoy fiziki, v. 31, no. 2, 1961, 231-237

TEXT: When working with a field emission microscope, 2 to 4 light spots consisting of two or four parts frequently appear on the screen of the microscope (Fig. 1). This is mainly the case when the piston walls are poorly degassed or if the vacuum is poor. Sometimes also oval spots, circles, rings and more complex patterns are observed (see Fig. 2), which are thoroughly described in Refs. 1 and 2. On the basis of the papers hitherto published it may be assumed as certain that 1) these patterns are formed by molecules or complexes of molecules and atoms which are adsorbed on the surface of the point; 2) the symmetry and intensity of the patterns are not connected with the symmetry of the molecules; and 3) electron exchange occurs between molecule and metal point. The intensity distribution in the spots is the same as in light which had passed through transparent

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threads (Ref. 12) or in amplitudes of ultraviolet vibrations which had passed through elastic rods (Ref. 14). During electron emission of molecules, the electron waves are canalyzed by the molecules. Electron emission mainly takes place from the direction of the free front side of the molecules. It is demonstrated that the molecules are waveguides for electron waves which was also experimentally confirmed. Two boundary conditions

$$\text{I)}\ \psi|_{r=a} = 0$$

$$\text{II)}\ \frac{\partial\psi}{\partial r}\Big|_{r=a} = 0. \qquad (5)$$

are set up. The authors also discuss the order of the occurrence of the various types of vibration and the form of the patterns on the screen as depending on the energy $E = ev$ of the electron, i.e., its dependence on the voltage drop on the waveguide. The critical lower energy at which such patterns appear on the screen is determined from equations

$$\text{I)}\ \frac{2m_e}{\hbar^2}(E + e\bar{v}_i) = \frac{\nu_{ni}^2}{a^2}, \quad (10a) \text{ and II) } \frac{2m_e}{\hbar^2}(E + e\bar{v}_i) = \frac{\mu_{ni}^2}{a^2}. \quad (10b),$$

which indicate that this order is exclusively determined by the law governing the increase of the roots of Bessel function ν_{ni} and μ_{ni}. Various types of vibration for both boundary conditions are shown in Table I. They indicate that the types of vibration are very similar as to their ψ distribution symmetry under both boundary conditions. The patterns consisting of two and four parts can actually be ascribed to the waveguide properties of the molecules. The order observed in the present paper is in full agreement with the order of the types of vibration at $\psi|_{r=a} = 0$, shown in Table I. Table II shows the types of vibration for a waveguide with square cross section which do not essentially differ from those of Table I. The values m corresponding to the lowest types of vibration are low; however, n may vary in a rather wide range. The patterns shown in Table III may be observed on the projector screen if m = 3 and n = 6. There are 2 figures, 3 tables, and 15 references: 4 Soviet-bloc and 6 non-Soviet-bloc.

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89166

Molecules and complexes of...

S/057/61/031/002/012/015
B124/B202

ASSOCIATION: Fiziko-tekhnicheskiy institut im. A. F. Ioffe, AN SSSR (Institute of Physics and Technology imeni A. F. Ioffe of the AS USSR) Fizicheskiy institut im. P. N. Lebedeva Akademii nauk SSSR (Institute of Physics imeni P. N. Lebedev of the Academy of Sciences USSR)

SUBMITTED: December 14, 1960

Card 4/8

23730

S/057/61/031/006/014/019
B116/B201

26.2240

AUTHORS: Komar, A. P., Mikheyev, G. F., Fominenko, V. P. and Chernov, N. N.

TITLE: Study of electron capture with steady betatron acceleration

PERIODICAL: Zhurnal tekhnicheskoy fiziki, v. 31, no. 6, 1961, 740-745

TEXT: The authors wanted to determine the part played by the individual sections of the capture range, i.e., the contribution of the electrons captured onto the various instantaneous orbits to the total current of all captured electrons. The investigation was conducted by the method earlier described by the authors (Ref. 1: ZhTF, 30, no. 7, p. 855-859, 1960). This method made it possible to inject the electrons only into the previously chosen narrow section $\delta - \delta$ of the instantaneous orbits within the capture interval a_1 (Fig. 1). This was achieved with the aid of a special injector device provided with deflector plates, which made it possible (1) to cut off the voltage pulse U(t) of injection on the side of the large or small t values to any pulse duration (Fig. 2A and B); (2) to cut out an interval

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in any pulse section by completely cutting off the residual pulse portion (Fig. 2 б); (3) to shift the injection pulse with or without the interval along the time axis. The injection pulse displayed a sine shape, and had a duration of 12 μsec and an amplitude of 40 kv. The intensity of gamma radiation was checked while conducting the experiments, instability amounting to 5% at most. The experiments were made on the synchrotron of FTI AN SSSR with an initial betatron acceleration. The radius of the equilibrium orbit was R_o = 32 cm, the coefficient of the magnetic field drop was n=0.67, and the steepness of increase of the magnetic field during injection was 1 örsted/μsec. Figs. 3 and 4 present typical experimental dependences of gamma radiation intensity on the position of the square pulses cutting off one or the other part of the injection pulse. Each figure refers to a definite position of the injection pulse with respect to the moment at which the magnetic field of the betatron passes through zero. The corresponding capture interval is represented by the Д curves. The А and б curves represent the change of intensity when cutting off the injection pulse on the side of the larger (А curve) and the smaller (б curve) t values

Study of electron capture...

by the square pulse applied to one of the plates. The ξ curves refer to the "scanning" of the injection pulse with the aid of the slit in time which has a width of 0.2 μsec and a spacing of 0.2 μsec (Fig. 2). The Γ curves denote the angle-of-capture values for the usual location of the injector at the external edge of the accelerator. The investigation allows the following to be stated: 1) The space charge generated by the electrons escaping from the injector before and behind the capture interval has no effect upon the conditions of capture. 2) Under optimum capture conditions, capture takes place chiefly onto the orbits near the equilibrium orbits. The initial amplitudes of the free radial oscillations of the electrons will in this case equal about half the chamber width. As a consequence, the focal points of radial oscillations are located on the boundaries of the region of acceleration. This nonuniform distribution of electrons in the chamber also determines the intensity limit. 3) Extremum intensity can be attained with different capture intervals Δt_1. The Δt_1 interval must satisfy the capture in the orbits near the equilibrium orbit. To each Δt_1 value corresponds a definite emission current and the 1st harmonic of nonuniformity of the magnetic field. This holds as long as the emission current is sufficiently large for realizing a collective

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Study of electron capture...

interaction. Strong "contraction" effects arise at weak emission currents. 4) The capture in every section of the interval Δt_c takes place such that the intensity up to the value of $\Delta t'$ that is sufficient for the emission current chosen and for the 1st harmonic of nonuniformity of the magnetic field, rises in proportion to the duration of the interval. Although an increase of the interval duration from $\Delta t'$ to Δt_c allows electrons to reach the chamber that correspond to a capture onto the orbits near the equilibrium orbit, the intensity of gamma radiation does not increase. This indicates that, with the use of this mode of injection, the limit of the mean electron density in the chamber is attained already in the interval $\Delta t'$. Further injecting even leads to a decrease of intensity. 5) The change of nonuniformity of the magnetic field with a change of the emission current depends upon the space charge produced by the electrons circulating in the chamber during the capture interval only. 6) It is noted that several authors hold the view that the intensity may be augmented by changing the form of the injection pulse. The authors of the present paper believe that such an increase can be brought about by a proper choice

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of the capture interval. This interval must be sufficiently large for the orbits near the equilibrium orbit, corresponding to the available invariable nonuniformity of the magnetic field of the accelerator concerned. The main contribution of one or the other front of the injection pulse is also explained thereby. With weak emission currents, an additional rise of intensity can be achieved owing to contraction effects. There are 5 figures and 1 Soviet-bloc references.

ASSOCIATION: Fiziko-tekhnicheskiy institut im. A. F. Ioffe AN SSSR Leningrad (Institute of Physics and Technology imeni A. F. Ioffe, AS USSR, Leningrad)

SUBMITTED: July 25, 1960

88402

S/020/61/136/004/008/026
B019/B056

26.2312

AUTHORS: Komar, A. P., Academician of the AS UkrSSR, Vorob'yev, A. A., and Korolev, V. A.

TITLE: Measurement of the Fluctuation of Ionization Produced by α-Particles in Argon

PERIODICAL: Doklady Akademii nauk SSSR, 1961, Vol. 136, No. 4, pp. 795 - 797

TEXT: In the introduction, the authors refer to the frequently used measurement of ionization caused by nuclear particles for the purpose of determining the energy of nuclear particles. A relation given by V.Fano (Ref.1) for the mean square fluctuation of the number of ion pairs with constant energy of the ionizing particles is written, and it is found that this formula is suited for determining the upper limit of the mean fluctuation, but not for more exact computations. Besides, Fano assumed that the ratio between the probabilities of the various inelastic processes is independent of the nature and energy of the ionizing particles. The measurements carried out by the authors were made by means

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Measurement of the Fluctuation of Ionization Produced by α-Particles in Argon

S/020/61/136/004/008/026
B019/B056

of α-particles emitted by Ra^{224} (E_α = 5.681 Mev) and of α-particles emitted by Fr^{221} (E_α = 6.336 Mev). The ionization chamber was filled with chemically pure argon + 1.5% CH_4, whereby recombination could be prevented under certain conditions. Electronic collimation was used, whereby the resolution and, thus, the quality of the spectrum could be improved. The electronic means for improving the signal-to-noise ratio are briefly described. The measurements are graphically represented in Figs.1 and 2. The half-width of the Ra^{224} α-line is 17 kev and has a mean fluctuation of 7.2 kev. This mean fluctuation δ is composed of $\delta = \sqrt{\delta_N^2 + \delta_p^2 + \delta_o^2}$, where δ_N, δ_p, δ_o are the mean fluctuations which are due to the fluctuations of the ionization, to radio noise, and to other causes. In the case of Ra^{224}, δ_o is negligibly small, and because δ_p = 4.7 kev, it follows that: δ_N = 5.5 kev. For Fr^{221}, δ_N = 6.0 kev was obtained. From a discussion of the results, the authors conclude that δ_N may be described by

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Measurement of the Fluctuation of Ionization Produced by α-Particles in Argon

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B019/B056

$$\delta_N(E_\alpha) = 5.8\sqrt{E_\alpha/6.0} \qquad (4)$$

for different E_α. E_α must be given in Mev. In the relation $\delta_N^2 = FN_o$ (1) given by Fano, where N_o is the mean number of ion pairs, F is found equal to 0.22, and its upper limit is given as $F_{lim} = 0.33$. The authors thank M. F. Sobolevskaya for her help in carrying out the measurements. There are 2 figures and 8 non-Soviet references: 5 US, 1 Canadian, 1 German, and 1 French.

ASSOCIATION: Fiziko-tekhnicheskiy institut Akademii nauk SSSR (Institute of Physics and Technology, Academy of Sciences USSR)

SUBMITTED: November 1, 1960

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88402

S/020/61/136/004/008/026
B019/B056

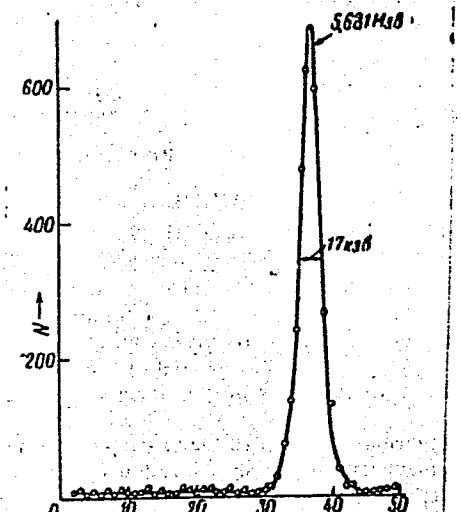
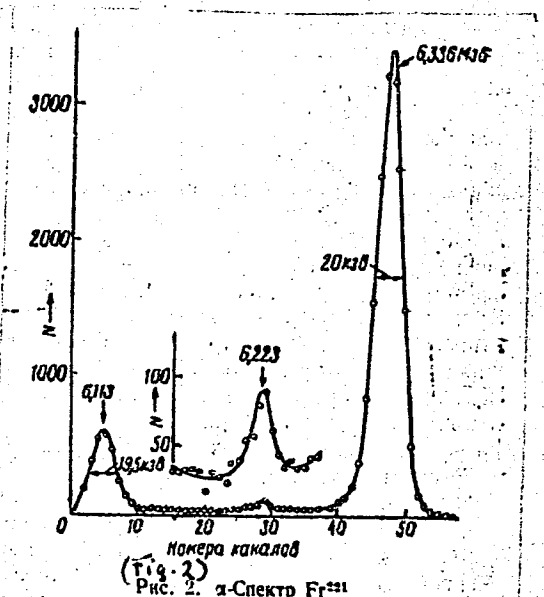


Рис. 1. α-Спектр Ra^{224}

(Fig. 1)



(Fig. 2)

Рис. 2. α-Спектр Fr^{221}

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20318

9.9100 (3wl 1041.)
26.2312

S/020/61/137/001/009/021
B104/B209

AUTHORS: Vorob'yev, A. A., Komar, A. P., Academician AS UkrSSR, and Korolev, V. A.

TITLE: The possibilities of reducing the effect of ionization fluctuations in gases

PERIODICAL: Doklady Akademii nauk SSSR, v. 137, no. 1, 1961, 54-57

TEXT: The authors based their work on a paper by Fano (Ref. 1: U. Fano, Phys. Rev., 72, 26 (1947)), in which an expression was obtained for the mean square fluctuations of the number of ion pairs at a constant energy of the ionizing particles. Fano's calculations show that these fluctuations are determined chiefly by the redistribution of ionized and excited atoms. Evidently, their total amount fluctuates less. The authors have now determined the amount of fluctuations of the total ionization, taking Fano's method as a basis. In this manner, they obtained the mean square fluctuation δ_J^2 of the total ionization $\overline{J}$:

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The possibilities of reducing ...

$\delta_J = \frac{A^2}{N_0 P}\overline{\left(n_k - \frac{E_k}{W}\right)^2} = \frac{F}{N_0}$. N_0 denotes the mean number of ion pairs, $W = W_0/(1 + \sigma(1-P)/P) = W_0 A$, $P = \sum P_k^i$ the total probability of ionization in inelastic collision, W_0 the mean energy of ion pair production without additional ionization, and n_k the number of ions produced in the k-th collision. The relations

$$F = \Phi(\sigma) + \frac{1}{PW_0^2}\left[\sum_{\text{ион}} P_k^i (W_i - E_k^i)^2 + \sum_{\text{возб}} P_k^e (W_e - E_k^e)^2\right]; \quad (8a) \qquad (8a)$$

$$\Phi(\sigma) = \frac{1}{W_0^2}\left[(W - W_i)^2 + \sigma\frac{1-P}{P}(W - W_e)^2 + \frac{1-P}{P}(1-\sigma)W_e^2\right]. \quad (8б) \qquad (8b)$$

are obtained for F. The last two terms in (8a) are due to fluctuations of the energy losses during ionization and excitation, and do not depend

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on the additional ionization. $\bar{\Phi}(\sigma)$ is determined by the redistribution of the number of ionized and excited atoms, as well as by the fluctuations arising in the additional ionization. In the limiting case where additional ionization is missing ($\sigma = 0$), Eq. (8a) goes over into the formula of Fano. Fig. 1 shows the ratio $\bar{\Phi}/\bar{\Phi}_0$ as depending on the probability σ of additional ionization for He and Ar. It is seen that $\bar{\Phi}(\sigma)$ for argon drops to nearly one-thirtieth with rising probability, and for helium it drops to nearly one-hundredth. The first of the terms appearing in (8a) was found to be always about 0.03, and the second is negligible. From this it follows that the accuracy of measurement of the energy of ionizing particles is considerably improved by recording all ionized and excited atoms. There are 1 figure and 3 non-Soviet-bloc references.

ASSOCIATION: Fiziko-tekhnicheskiy institut Akademii nauk SSSR
(Institute of Physics and Technology of the Academy of Sciences USSR)

Card 3/4

32426

24.6400

S/020/61/141/006/009/021
B104/B112

AUTHORS: Komar, A. P., Academician AS UkrSSR, Bochagov, B. A., and Solyakin, G. Ye.

TITLE: Energy distribution of α-particles in argon photodisintegration

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 141, no. 6, 1961, 1339-1342

TEXT: The authors observed the energy distribution of α-particles by an ionization chamber with grids for a period of 30-40 hours. Fig. 1 shows the block diagram of the experimental arrangement. γ-rays (E_{max} = 70 Mev) were produced by the synchrotron of the Physicotechnical Institute AS USSR and possessed lengths up to 1500 μsec. The device was calibrated by means of the α-particle spectrum of natural uranium. Energy distributions of α-particles were determined at argon pressures of 1, 1.3, 2, and 3 atmospheres. The maxima of energy distributions at these pressures lay at 4.6, 4.87, 4.4, and 4.3 Mev, the corresponding half-widths amounted to 2.62, 2.76, 3.20, and 3.65 Mev. Since these spectra differ only slightly, the effect of protons, deuterons, and tritons on the taking of spectra may

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be considered low. Effectiveness of recording of charged particles with $R^* > d$ decreases with increasing R^*. In this case, R^* is a value which approximately equals the particle path d = 35 cm (distance between electrode 1 and grid 2). The natural energy spectrum of α-particles produced in argon photodisintegration is constructed from the spectra obtained. The spectrum is shown in Fig. 3. Its maximum lies at 4.8 Mev, its half-width is 3.3 Mev. By a comparison with the spectrum calculated by the statistical theory, the difference of maxima was found to be 2 Mev. The deviation of the experimental from the theoretical value may be explained by the occurrence of the reaction $A^{40}(\alpha\gamma n)S^{36}$ besides reaction $A^{40}(\gamma\alpha)S^{36}$ or by a Coulomb penetration factor higher than used in the calculation. The authors thank the team of the synchrotron of the Physicotechnical Institute AS USSR for work performed. There are 3 figures and 9 references: 3 Soviet and 6 non-Soviet. The three references to English-language publications read as follows: M. E. Toms, I. McElhinney, Phys. Rev., 111, 561, (1958); M. M. Shapiro, Phys. Rev., 90, 171 (1953); G. A. Ferguson, J. Halpern et al., Phys. Rev., 95, 776 (1954).

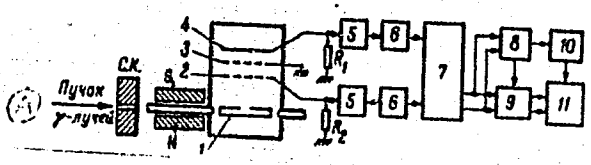
3246

Energy distribution of ... S/020/61/141/006/009/021
B104/B112

ASSOCIATION: Fiziko-tekhnicheskiy institut Akademii nauk SSSR (Physicotechnical Institute of the Academy of Sciences USSR)

SUBMITTED: September 22, 1961

Fig. 1. Block diagram of the experimental arrangement.
Legend: (A) Bundle of γ-rays; (C.K.) lead collimator; (1) electrode; (2) grid; (3) grid; (4) anode; (5) preamplifier; (6) amplifier; (7) selector; (8) coincidence circuit; (9) brightening circuit; (10) impulse shaper; (11) recording device (electron-beam tube).



Card 3/4 3

37944

S/181/62/004/005/040/055
B139/B102

9.3120

AUTHORS: Komar, A. P., and Savchenko, V. P.

TITLE: Effect of impurities and dislocations on the auto-emission of electrons in the case of metallic crystals

PERIODICAL: Fizika tverdogo tela, v. 4, no. 5, 1962, 1346 - 1351

TEXT: Microscopic exposures were made of the emission from technically pure platinum, silver, and copper single crystals. The specimens were heated in a vacuum of $\leq 10^{-9}$ mm Hg, some of them to more than 1000°C, emission being induced by continuous or pulsed voltage of 3 - 40 kv. Iron was sputtered onto a platinum specimen which was then heated to 700°C for a period of 6 min, within which the iron dissolved in the platinum. When the specimen was cooled rapidly, the pictures showed bright spots spreading rapidly over the whole specimen after 1 min heating at 900°C. A small bulge developed at the tip of the specimen as a result of electric discharges. The specimen was then heated to 1200°C and allowed to cool down to room temperature. This caused some

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of the white spots to disappear, whilst others darkened preserving a bright fringe. These erupting white spots are the impurities which diffuse rapidly from the cylindrical part toward the tip of the specimen, emerging at the surface along with the dislocations, where the intensity of electron emission is locally damped by them. As a result of this emergence of impurities, a cathode formed of commercial platinum becomes purified through alternate heating and cooling under a high vacuum in the electric force field. There can be no doubt of the correlation found to exist between the appearance of bright spots in the microscopic picture and electric breakdown. If the tip of the specimen is thoroughly purified from impurities and dislocations, breakdown is difficult to achieve, even if a multiple of the voltage is applied which before purification was sufficient to cause it. There are 4 figures and 1 table.

ASSOCIATION: Fiziko-tekhnicheskiy institut im. A. F. Ioffe AN SSSR Leningrad (Physicotechnical Institute imeni A. F. Ioffe AS USSR, Leningrad)

SUBMITTED: January 18, 1962

Card 2/2

KOMAR, A.P.; KOMAR, A.A.

Theory of the wave guide properties of metallike molecules and their complexes. Zhur.tekh.fiz. 32 no.7:867-873 Jl '62. (MIRA 15:8)

1. Fiziko-tekhnicheskiy institut imeni A.F.Ioffe AN SSSR, Leningrad i Fizicheskiy institut imeni P.N.Lebedeva AN SSSR, Moskva.
(Molecular association) (Wave guides) (Field emission)

39479
S/056/62/043/002/009/053
B102/B104

26.2311

AUTHORS: Vorob'yev, A. A., Komar, A. P., Korolev, V. A.

TITLE: Decrease of ionization fluctuations of α-particles in argon

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 43, no. 2(8), 1962, 426-428

TEXT: The authors had shown earlier (DAN SSSR, 137, 54, 1961) that the ionization fluctuations associated with redistributions of the numbers of excited and ionized molecules can be reduced by adding a gaseous impurity with an ionization potential lower than the energy of the lowest excited level of the principal component. Here, the authors tried to check this possibility by experiment. They used a pulsed ionization chamber filled with argon containing 0.17 % N_2, 0.02 % O_2, and an acetylene impurity. As its ionization potential of 11.35 ev is lower than the lowest argon level (11.5 ev), the acetylene addition increases the ionization. The ionization fluctuations were calculated from the half-width of the α-line (E_α = 5.681 Mev) of Ra^{224}; for comparison, the measurements were repeated

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Decrease of ionization...

on Ar + 1 % CH_4

S/056/62/043/002/009/053
B102/B104

APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000824020009-6

	ΔE_α, kev	ΔE_{fl}, kev	ΔE_N, kev	ΔN	N	F
Ar+1% CH_4	8.1	5.8	5.7	216	215000	0.22
Ar+0.8% C_2H_2	6.0	4.7	3.7	175	268000	0.09

where ΔE_α = total root-mean-square pulse-height fluctuations, ΔE_{fl} = root-mean-square pulse-height fluctuations due to electronic noise, ΔE_N = the same due to fluctuations in the number of ion pairs, N = total number of ion pairs, ΔN = root-mean-square fluctuation in the number of ion pairs; F is determined by $\Delta N/N = \sqrt{F/N_o}$; N_o = 212,000 ion pairs. The maximum half-width of the α-line was 8.7 kev. There are 1 figure and 1 table.

ASSOCIATION: Fiziko-tekhnicheskiy institut im. A. F. Ioffe Akademii nauk SSSR (Physicotechnical Institute imeni A. F. Ioffe of the Academy of Sciences USSR)

SUBMITTED: March 13, 1962

Card 2/2

24.6.60

43362
S/056/62/043/005/008/058
B183/B102

AUTHORS: Bochagov, B. A., Komar, A. P., Solyakin, G. Ye.

TITLE: The energy distribution of photofission fragments from U^{238} nuclei for various maximum energies of a γ-quantum bremsstrahlung spectrum

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 43, no. 5(11), 1962, 1611 - 1615

TEXT: The bremsstrahlung spectrum of a synchrotron having maximum energies of $E_{\gamma,max}$ = 17.5, 30 and 50 Mev was used for plotting contour diagrams of the kinetic energy distribution of photofission fragments from U^{238} nuclei. A double ionization chamber with an oscilloscope connected to two deflection systems was used as detector. A collodion film coated with bismuth on both sides, on one of which a layer of uranyl nitrate was condensed, served as target. 15000 to 20000 fission events were recorded in each series of measurements. The contour diagrams show that in symmetric fission the yield probability increases with increasing $E_{\gamma,max}$. The kinetic energy at the moment in which the fission products fly apart

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The energy distribution of... S/056/62/043/005/008/058
B183/B102

is, however, found to be constant within the limits of error ± 3 Mev when the mean excitation energy of the fissioning nuclei is varied a moderate amount. The values 13.6, 17.0 and 21.4 Mev obtained for the mean nuclear excitation energy in symmetric fission correspond to the maximum energies $E^{*}_{\gamma,max}$ = 17.5, 30 and 50 Mev and were derived from an estimate of the mean nuclear excitation energy in asymmetric fission. This estimate, based on data previously published on known cross sections for the photofission from U^{238} and on the structure of the bremsspectrum, is practically independent of $E^{*}_{\gamma,max}$. So the resulting value for the kinetic energy during the formation of the nuclear fragments in asymmetric fission is found to be always 169 Mev. The position of the maximum of the energy distribution of the fission products in symmetric fission is determined from the shift relatively to this maximum in asymmetric fission. There are 3 figures.

ASSOCIATION: Fiziko-tekhnicheskiy institut im. A. F. Ioffe Akademii nauk SSSR (Physico-technical Institute imeni A. F. Ioffe of the Academy of Sciences USSR)

SUBMITTED: June 5, 1962

Card 2/2

S/056/62/043/005/015/058
B102/B104

AUTHORS: Komar, A. P., Kulikov, A. V., Chizhov, V. P., Yavor, I. P., Volkov, Yu. M.

TITLE: Emission of fast deuterons in the photodisintegration of O^{16}

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 43, no. 5(11), 1962, 1657-1659

TEXT: Chizhov et al. (Nucl. Phys. 34, 562, 1962) have found that the deuteron yield from (γ,d) reactions with Li^6, Be^9, $B^{10,11}$ and Cu can be observed only when E_γ exceeds the kinematic threshold of the reaction by about the nucleon binding energy. This result was now verified and it was determined which particles accompany the photodeuterons. The authors used a cloud chamber filled with $He + O_2$ and scintillation counter telescopes in their experiments on the photodisintegration of O^{16} induced by $E_{\gamma max}$=90 Mev. Deuterons with $E_d > 11$ Mev were recorded by the telescopes (accuracy of E_d measurement: ±5%) and the energies of the recoil nuclei

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were determined from their tracks. For the N^{15} nuclei produced in $O^{16}(\gamma,p)N^{15}$ the range - energy curves were determined. Among the stereophotographs of 27 photodeuterons with E_d between 11 and 40 Mev there was none that could be attributed to an $O^{16}(\gamma,d)N^{14}$ reaction. With yields of 41% each, the reactions were of type (γ,dp) and (γ,dn) with thresholds of 28.25 and 31.2 Mev, respectively. The remaining reactions (18%) were multipronged stars with at least two particles besides the deuteron. If the (γ,dp) and (γ,dn) reactions are assumed to occur in two stages (emission of p and n after d) the excitation energy of the compound nucleus N^{14} can be estimated. When the low probability of $O^{16}(\gamma,d)N^{14}$ is taken into account, the first excited level of N^{14} $(0^+,T=1)$ is obtained as 2.31 Mev. The emission directions of the deuterons and the accompanying nucleons are correlated: in most cases p and n were emitted oppositely to d. Such a correlation exists only for nucleons with more than 2 Mev. There are 2 figures and 1 table.

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S/056/62/043/005/015/058
B102/B104

Emission of fast deuterons in the ...

ASSOCIATION: Fiziko-tekhnicheskiy institut im. A. F. Ioffe Akademii nauk SSSR (Physicotechnical Institute imeni A. F. Ioffe of the Academy of Sciences USSR)

SUBMITTED: June 29, 1962

Card 3/3

S/020/62/144/003/014/030
B108/B102

AUTHORS: Komar, A. P., Academician AS UkrSSR, and Shrednik, V. N.

TITLE: Atomic structure of tungsten microcrystals of up to 60 Å size

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 144, no. 3, 1962, 541-543

TEXT: Tungsten microcrystals having radius of some 200 Å were studied by using an ion projector with helium ions at 9.5 kv. The point of the projector was cooled with solid nitrogen. The images obtained were very clear. The image can be improved considerably when the point contains "tubercles" caused by vacuum discharge. Using such a procedure the authors succeeded in observing the atomic structure of tungsten microcrystals having a diameter of some 60 Å. The most important English-language reference is: E. W. Müller, Adv. in Electronics and Electron Phys., 13, 83 (1960).

ASSOCIATION: Fiziko-tekhnicheskiy institut im. A. F. Ioffe Akademii nauk SSSR (Physicotechnical Institute imeni A. F. Ioffe of the Academy of Sciences USSR)

~~Card 1/2~~

39584
S/020/62/145/002/008/018
B178/B104

21,6600

AUTHORS: Komar, A. P., Academician AS UkrSSR, Kruglov, S. P., and Lopatin, I. V.

TITLE: Sensitivity determination of a quantometer for energies of 15-300 Mev

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 145, no. 2, 1962, 309-311

TEXT: A quantometer is used to measure the area $S_T = \int_0^\infty i(t)dt$ bounded by the ionization current i(t) and produced by γ-irradiation of a body. This area is proportional to the energy current

$$U = \frac{\omega \bar{Q}}{e} \frac{\delta_z}{\delta_g} S_T$$

where ω is the energy consumed for the production of ion pairs; e is the electron charge; $\bar{Q}$ is the mean ionization loss; δ_z is the density of the matter; and δ_g is the density of the gas. The value of S as determined

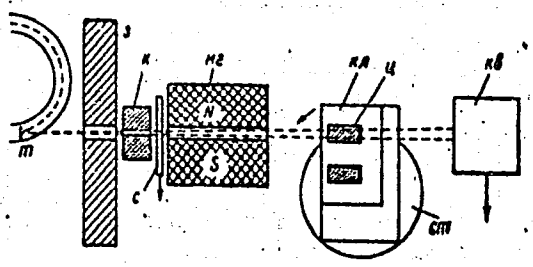
Card 1/3

S/020/62/145/002/008/018
B178/B104

Sensitivity determination of a...

ASSOCIATION: Fiziko-tekhnicheskiy institut im. A. F. Ioffe Akademii nauk SSSR (Physicoteohnical Institute imeni A. F. Ioffe of the Academy of Sciences USSR)

SUBMITTED: April 14, 1962



Card 3/3

Fig. 1

S/020/62/146/005/006/011
B125/B186

24.6600

AUTHORS: Komar, A. P., Academician AS UkrSSR, Bochagov, B. A., Fadeyev, V. I.

TITLE: Fission of U^{238} nuclei by continuous-spectrum photons with $E_{\gamma max}$ = 35 Mev and by 14-Mev neutrons

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 146, no. 5, 1962, 1051-1053

TEXT: The mass and energy distributions of the fragments from fission of heavy nuclei by photons and neutrons are compared for various angular intervals. These distributions were taken by means of a double pulsed ionization chamber. The target, 150 $\mu g/cm^2$ uranylnitrate deposited on an aluminated colladion film of 30 $\mu g/cm^2$, was transparent to the fission fragments and was attached to the cathode of the ionization chamber. The target was bombarded by neutrons and γ-quanta obtained from a neutron generator and from the synchrotron of the Fiziko-tekhnicheskiy institut im. A. F. Ioffe AN SSSR (Physicotechnical Institute imeni A. F. Ioffe AS USSR). The diagrams $E_1 = \varphi(E)$ were plotted for five θ-intervals between 0 and 80°

BOCHAGOV, B.A.; KOMAR, A.P.; FADEYEV, V.I.

Kinetic energy and angular distribution of the fragments of U^{238} fission by neutrons and photons. Atom. energ. 15 no.3:191-194 S '63. (MIRA 16:10)

(Uranium isotopes) (Nuclear fission)

L 18474-63 EWT(m)/BDS AFFTC/ASD

ACCESSION NR: AP3005506 S/0057/63/033/008/0949/0953

AUTHOR: Komar, A.P.; Kruglov, S.P.; Lopatin, I.V.

TITLE: Bremsstrahlung energy measurement with a "standard" ionization chamber

SOURCE: Zhurnal tekhnicheskoy fiziki, v.33, no.8, 1963, 949-953

TOPIC TAGS: energy measurement, gamma-ray , bremsstrahlung, ionization chamber, standard instrument

ABSTRACT: The "standard" ionization chamber is a simple 130 mm diameter cylindrical chamber with copper end plates that was built and calibrated at the Physical-Technical Institute, Leningrad, with the intention that it be copied elsewhere and employed, with the Leningrad calibration, as a secondary standard for the measurement of the energy flux in collimated gamma-ray beams. The construction of the chamber is shown in the Enclosure. The instrument was calibrated against a calorimeter, using synchrotron bremsstrahlung, over the range from 15 to 90 MeV. The sensitivity is about 2×10^{-19} coulomb/MeV and varies by about 14% over this range. The sensitivity also varies slightly with the beam diameter, dropping by about 5% as the beam diameter is increased from small values to 100 mm. The paper also briefly

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L 18474-63
ACCESSION NR: AP3005506

6

describes a simple instrument, consisting of a standard capacitor and an electronic electrometer, for measuring the ionization current. "The authors express their gratitude to V.S.Uskov, I.P.My*sev, V.M.Suvorov, I.A.Pronin and Yu.M.Pereskokov, who participated in the measurements." Orig.art.has: 6 figures.

ASSOCIATION: Fiziko-tekhnicheskiy institut im.A.F.Ioffe AN SSSR, Leningrad (Physico-technical Institute, AN SSSR)

SUBMITTED: 30Jul62 DATE ACQ: 08Sep63 ENCL: 01

SUB CODE: PH NO REF SOV: 000 OTHER: 001

Card 2/3

KOMAR, A.P.; KRUGLOV, S.P.; LOPATIN, I.V.

Comparison of absolute energy measurements in a beam of bremsstrahlung conducted in laboratories of various countries. Zhur. eksp. i teor. fiz. 45 no.3:824-825 S '63. (MIRA 16:10)

1. Fiziko-tekhnicheskiy institut imeni A.F. Ioffe AN SSSR.
(Bremsstrahlung—Measurement)

AT3002872 1029/1031

[illegible] A. P. (Academician, AN [illegible]

[illegible] aging and recovery in Ni-Be alloy [illegible] treated in a [illegible]

SOURCE: AN SSSR. Doklady*, v 150, no. 5, 1963, 1029-1031

[illegible] not aging, recovery, Ni-Be alloy, Ni-Be [illegible] heat treatment, [illegible]

[illegible] The purpose of this work was the demonstration of the [illegible] the field-emission [illegible] two samples of a Ni-Be [illegible] Both of them [illegible] weight. One sample was [illegible] furnace, the other one by vacuum deposition. The needle [illegible] was prepared by the [illegible] [illegible] by Komar et al. [illegible] 1342). Pulsating voltage of 50 hz and 5 to 45 kv [illegible]. Magnifications reached 250,000. The results are

KOMAR, A.P., akademik; BOCHAGOV, B.A.; FADEYEV, V.I.

Fission of Th^{232} nuclei by 14 Mev. neutrons and continuous spectrum photons with an energy of $E_{\gamma\,max}$ = 90 Mev. Dokl. AN SSSR 152, no.4:858-861 O '63. (MIRA 16:11)

1. Fiziko-tekhnicheskiy institut im. A.F. Ioffe AN SSSR.
2. AN UkrSSR (for Komar).

KOMAR, A.P.; KRUGLOV, S.P.; LOPATIN, I.V.

Ionization devices for the measurement of energy in γ-ray beams. Med. rad. 9 no.7:46-51 Jl '64. (MIRA 18:5)

1. Fiziko-tekhnicheskiy institut imeni Ioffe AN SSSR.

ACCESSION NR: AP4031188 S/0056/64/046/004/1497/1499

AUTHORS: Bazhanov, Ye. B.; Komar, A. P.; Kulikov, A. V.

TITLE: Photoneutrons from Li-6 and Co-59

SOURCE: Zh. eksper. i teor. fiz., v. 46, no. 4, 1964, 1497-1499

TOPIC TAGS: lithium-6, cobalt-59, photoneutron, photoneutron reaction cross section, integral cross section, giant resonance splitting, hydrodynamic theory

ABSTRACT: The cross section of the photoneutron reactions on Li^6 and Co^{59} were investigated in the synchrotron of FTI im. A. S. Ioffe AN SSSR, using a technique where slowed down neutrons were registered by BF_3 counters. The data obtained confirm the presence of a broad resonance in the energy range 7--17 MeV, a considerable dip at 17--19 MeV, and a rise above 19 MeV. The data indicate the presence of two

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ACCESSION NR: AP4031188

additional maxima at 20--24 and 26--30 MeV, which were not indicated in the recent investigation by Costa et al. (Phys. Lett. v. 4, 308, 1963). The results indicate that the Li^6 has high polarizability and the theoretical calculations of J. S. Levinger (Phys. Rev. v. 107, 554, 1957) do not apply to light nuclei. In the case of Co^{59} the results are in good agreement with the predictions of the hydrodynamic model of Okamoto and Danos. Orig. art. has: 2 figures.

ASSOCIATION: Fiziko-tekhnicheskiy institut im. A. F. Ioffe Akademii nauk SSSR (Physicotechnical Institute, Academy of Sciences SSSR)

SUBMITTED: 21Nov63 DATE ACQ: 07May64 ENCL: 02

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

Card 2/4

ACCESSION NR: AP4019972 S/0020/64/154/006/1318/1320

AUTHOR: Komar, A. P. (Academician); Kruglov, S. P.; Lopatin, I. V.; Mus, K. F.

TITLE: Constant sensitivity quantometer for gamma radiation of energy above 15 Mev

SOURCE: AN SSSR. Doklady*, v. 154, no. 6, 1964, 1318-1320

TOPIC TAGS: gamma quantometer, gamma radiation energy measurement, constant sensitivity quantometer, quantometer, ionization chamber, multiplate ionization chamber

ABSTRACT: The gamma quantometer is a multiplate ionization chamber used for measurement of the energy in a beam of gamma photons. Its ionization current depends on the partial ionization in different sections of the chamber. The purpose of the present work is to obtain a constant sensitivity of the quantometer in various energy ranges of gamma rays. This is achieved, first, by the construction of a new model permitting a better integration of the ionization in different

Card 1/2

ACCESSION NR: AP4019972

sections, and, secondly, by filling the chamber with hydrogen at 2.5 atm., instead of air. In the experimentally tested energy range from 10 to 70 Mev, the sensitivity was found to be constant. Orig. art. has: 3 figures.

ASSOCIATION: Fiziko-tekhnicheskiy institut im. A. F. Ioffe Akademii nauk SSSR (Physics-Engineering Institute, Academy of Sciences SSSR)

SUBMITTED: 23Nov63 DATE ACQ: 23Mar64 ENCL: 00

SUB CODE: PH NO REF SOV: 002 OTHER: 001

Card 2/2

AP5018554

[illegible], A. P. (Academician AN UkrSSR); [illegible]

[illegible] and form of the points of an [illegible] electric [illegible]

[illegible] Doklady, v. 158, no. 4, [illegible]

electron microscope, crystal, metal[illegible]

[illegible] describe the [illegible] at [illegible] Institute im. A. P. [illegible] electron microscope [illegible]

[illegible] of metals and alloys by [illegible] was treated [illegible] W, Mo, Re, the [illegible] melting point [illegible] 1,600° it was technologically very difficult to prepare discharge points which would [illegible] by the Institute [illegible] effective in qualitative electron [illegible]

AP5018554

compounds with the melting points referred to. ... authors' experiment was undertaken to supply lacking information ... dimensions and curvature of the points ... which have a ... on the electric field at the ... the magnification on the ... [illegible]

... a very ... the use of ... possibility ... allow ... form of the points ... ... at a temperature ... spherical points were ... 10^{-5} cm, and in the ... $3 \cdot 10^{-5}$ ... accepted which gave a sufficient ... geometrical ... of the crystal boundaries.

... the apices of the "macropoints" were nearly hemispherical ... following breakdown there was significant ... of the surface ... authors believe that a liquid phase occurs at the ... of ... that this, supplemented by ponderomotive forces, gives rise

AP4048036 S/020/64/158/006/1310/1313

Komar, A. P. (Academician AN UkrSSR); Savchenko, V. P.

TITLE: Dimensions and shape of cross section of formations causing the autoelectronic emission of organic semiconductors

SOURCE: AN SSSR. Doklady*, v. 158, no. 6, 1964, [illegible]

TOPIC TAGS: organic semiconductor, field emission, electron micro-

The purpose of the investigation was to obtain quantitative information on the cross sections of the molecular complexes in the unusual electron-microscope pictures of tungsten films on which low-molecular compounds are deposited. The published information on this subject is contradictory, and the observed effects are frequently attributed to separate molecules. Another purpose of the investigation was to check on the 'water-wire' theory of

...rence of these spots, proposed by one of the authors else- ... P. Komar and A. A. Komar, ZhTF ... 1961). The ...riment consisted in finding a way ... some cali- ... of known radius <<1 ... on the ... metal needle ... ≲ 1 ... By getting around the difficulties of such an ..., the authors succeeded in checking ... formula given ... for the local magnification ... Appl. Phys., v. 27, 215, ... it possible to determine the ... dimensions ... ations in question from their image ... the projector ... some 600 spots, in the form of two-petal and four-petal ... were produced by condensing copper phthalocyanine or an- ... from vapor on a tungsten needle ... with liquid nitro- ... radius a of the spot was determined with a formula derived ... formula, in which all the ... could be readily ... The test procedure is briefly described. The experi- ...obtained ratio of the radii of the two-petal and four-petal ... was close to that calculated on the ... of the Rose for-

NP: AP4048036

Furthermore confirmed the theory of [illegible] production
s and the model proposed for [illegible] theory
Kenshteyn (Molekulyarnaya optika [illegible] Optics)
. Orig. art. has: 1 figure and 4 formulas.

Fiziko-tekhnicheskiy institut im. A. F. Ioffe Akademii
Physicotechnical Institute, Academy [illegible], SSSR)

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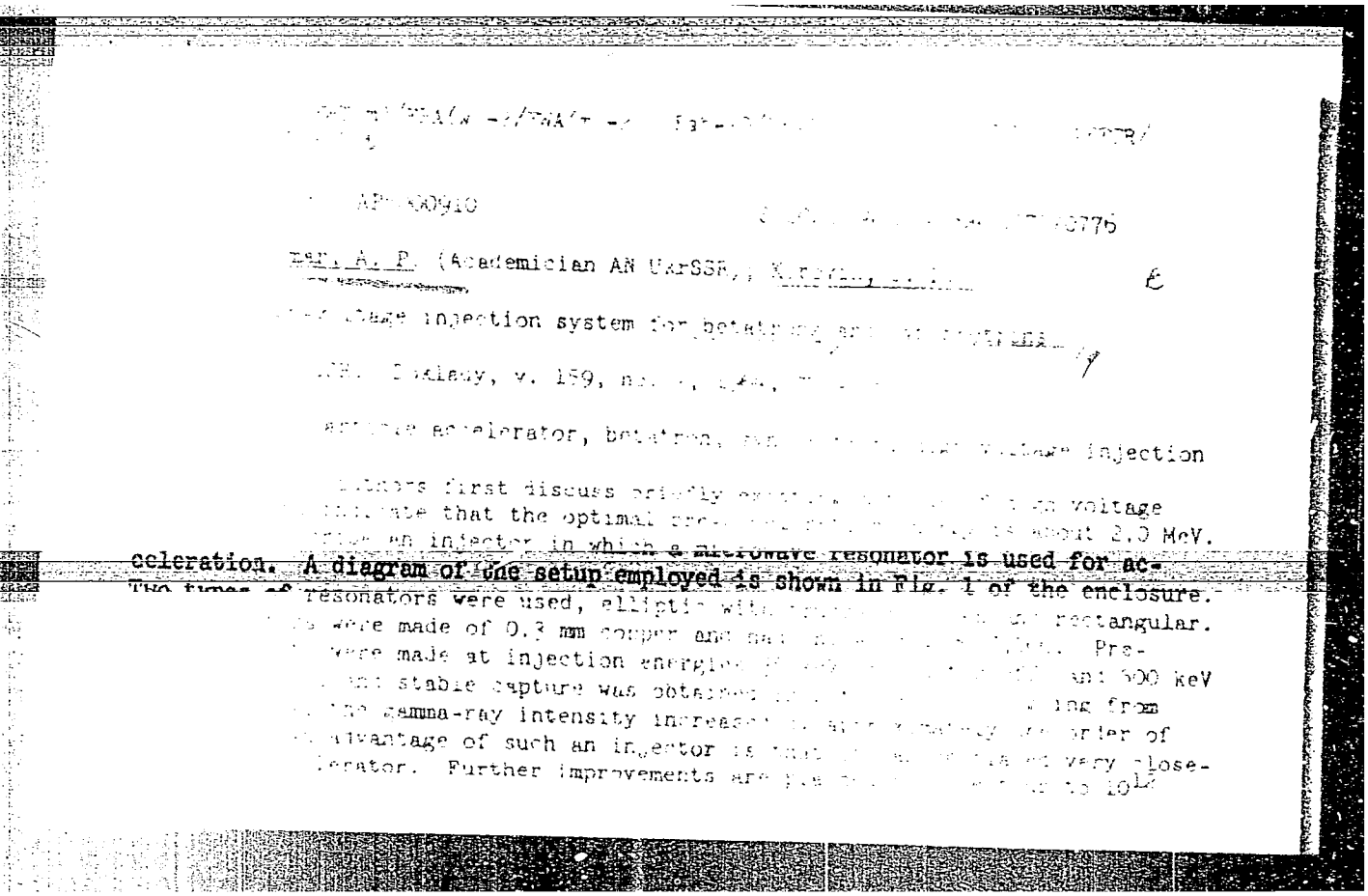
SUBCL: 00

SS, EC NR REF SOV. OTHER: 006



AP[illegible]0910

[illegible]0775

[illegible] A. P. (Academician AN UkrSSR, [illegible])

[illegible] charge injection system for betatrons and [illegible]

[illegible], Berkeley, v. 159, no. [illegible], [illegible]

[illegible] accelerator, betatron, [illegible] charge injection

Authors first discuss briefly [illegible] on voltage [illegible] indicate that the optimal [illegible] is about 2.0 MeV. [illegible] an injector in which a microwave resonator is used for acceleration. A diagram of the setup employed is shown in Fig. 1 of the enclosure. Two types of resonators were used, elliptic with [illegible] rectangular. [illegible] were made of 0.3 mm copper and had [illegible]. Pre- [illegible] were made at injection energies of [illegible] and 500 keV [illegible] stable capture was obtained [illegible] ing from the gamma-ray intensity increased [illegible] order of magnitude. The advantage of such an injector is that [illegible] and very close- [illegible]erator. Further improvements are [illegible] to 10[illegible]

AP 700910

...ies with energy 500 -- 1000 keV ... ...tures.

...iko-tekhnicheskiy institut im. A... ...demii nauk SSSR
...al Institute, Academy of Sciences ...

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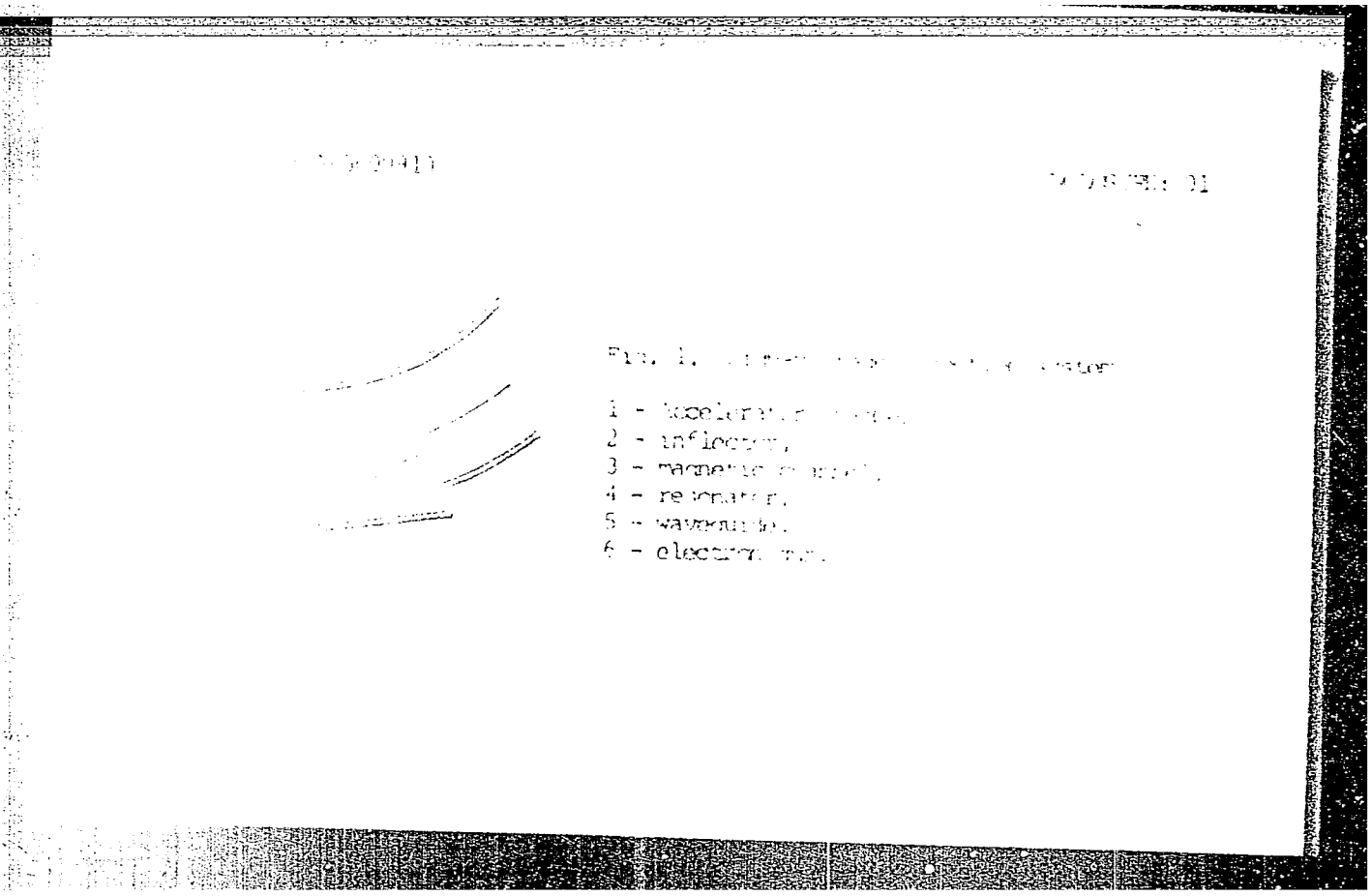

Fig. 1.

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6 -

EPR/EW ;:/EPA(s)-2/EWA(c)/EWP( ) EWT ( ) EWT( ) EWP ( ) EWP(b)/T/
Pz-6/Peb IJP(c) AT RM WF WW

S/0181/65/007/003/0759/0768

Savchenko, V. P.

theory of autoelectronic emission of molecular complexes of experimental results

verdogo tela, v. 7, no. 3, 1965, 759-768

electronic emission, electron microscope, polymer filament, semi-guide theory

are presented of an experimental determination of the ratio of of the so-called "molecular" spots produced by anomalous auto- of polymer filamets of semiconductor substances. The stances molecular organic semiconductors

mined by the authors earlier (DAN SSSR v. 158, 131, 1964) and were found to be such as to make waveguide propagation of the electromagnetic waves through these films

The experimental method is based on a relation established between

AP5006878

...rs of the modes that can propagate in a cylindrical waveguide and ...n pattern that can be observed with the aid of an electron micro... ...perimental procedure and equipment are described. Spots hitherto ...redicted by the waveguide theory have been observed for the first ...ary spots due to the semimetals selenium, tellurium, and carbon have ...e agreement between theory and experiment is considered to be good ...t the anomalous autoelectronic emission of adsorbed or condensed ...rganic semiconducting materials and metallic points can be satis... ...ribed with the aid of the waveguide modes for delocalized electrons ... thin polymer filaments stretched along the lines of the electric ...ar. has: 5 figures and 9 formulas.

...: Fiziko-tekhnicheskiy institut im. A. F. Ioffe AN SSSR, Leningrad ...al Institute AN SSSR)

ENCL: 00 SUB CODE: 55, EC

OTHER: 011

KOMAR, A.P., akademik; NAKHNOVSKIY, Ye.D.

Low-energy charged particles in the photodisintegration of the Be^9 nucleus. Dokl. AN SSSR 160 no.6:1300-1303 F '65.

(MIRA 18:2)

1. Fiziko-tekhnicheskiy institut im. A.F. Ioffe AN SSSR. 2. AN UK SSR (for Komar).

L 20772-66 EWT(m)/EWP(t) DIAAP/IJP(c) JD/JG

ACC NR: AP6012024 SOURCE CODE: UR/0020/65/160/006/1300/1303

AUTHOR: Komar, A. P. (Academician AN UkrSSR); Makhnovskiy, Ye. D.

ORG: Physicotechnical Institute im. A. F. Ioffe, AN SSSR (Fiziko-tekhnicheskiy institut AN SSSR)

TITLE: Charged low-energy particles in the photodisintegration of the Be sup 9 nucleus

SOURCE: AN SSSR. Doklady, v. 160, no. 6, 1965, 1300-1303

TOPIC TAGS: charged particle, beryllium, magnetic field, deuteron, proton

ABSTRACT: The authors investigated the energy spectra and yields of charged particles resulting from the irradiation of Be^9 by bremsstrahlung with $E_{\gamma\,max}$ = 35 Mev. A beryllium target with a thickness of 4.7 mg/cm^2 was irradiated in a vacuum chamber with photoplates which was in a uniform magnetic field (H = 13,500 oersteds) approximately perpendicular to the direction of particle emission. Measured were the particle paths R and the orientations of their tracks in emulsion; the latter made it possible to determine the radii of curvature ρ of the trajectories in the magnetic field and, by a comparison with the calculated dependencies ρ (R) in the case of the given H, to identify the particles. The energy distribution of photoprotons from the Be^9 is given. A rather high ratio of deutron yield to proton yield was established, and the authors conclude that not less than half of the particles counted among the deutrons were evidently

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L 20772-66
ACC NR: AP6012024

caused, not by many-particle decays of the beryllium nucleus, but by the reaction $Be^9(\gamma, d)Li^7$. The energy spectra for α-particles are presented. In the photodisintegration of Be^9 α-particles may appear in (γ, n) and (γ, α) reactions. A comparison of the integral cross sections shows that the form of the resulting α-particle energy spectrum is determined mainly by the reaction $Be^9(\gamma, n)Be^{8*} \rightarrow 2\alpha$. Orig. art. has: 4 figures and 2 formulas. [JPRS]

SUB CODE: 20 / SUBM DATE: 09Jul64 / ORIG REF: 004 / OTH REF: 015

Card 2/2 ULR

L 21018-66 EWT(m)/EWA(h)
ACCESSION NR: AP5018075

UR/0020/65/163/001/0071/0073

AUTHOR: Komar, A. P. (Academician AN UkrSSR); Bochagov, B. A.; Fadeyev, V. I.

TITLE: Asymmetry and angular anisotropy of mass distributions of the fragments produced by fission of U^{238} with 14-Mev neutrons

SOURCE: AN SSSR. Doklady, v. 163, no. 1, 1965, 71-73

TOPIC TAGS: uranium, nuclear fission, fission product, angular distribution

ABSTRACT: This is a continuation of earlier work by the authors (DAN v. 140, 1051, 1962), where it was observed that the mass distribution of the fragments of U^{238} nuclei fissioned by 14-Mev neutrons exhibits an angular dependence on the angle between the neutron beam and the fragment direction. The authors used the earlier data as well as data by others to determine the yields of the fission fragments of U^{239}, U^{238}, and U^{237}. They also plotted, on the basis of the known contributions made by the fission of these nuclei to the total yield and to their anisotropy, the relative yields of the fragments for the case of fission of U^{238} by 14-Mev neutrons. The calculated results agree well with the experiment. It is concluded on this basis that the theoretically calculated result that the yield of fragments with ratio of the mass of the heavy fragment to that of the light fragment $(R) \geq 1.45$ in the direction of the nucleon beam increases noticeably, and also the deduced con-

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L 21018-66

ACCESSION NR: AP5018075

nection between R and the anisotropy, are not affected by the simplifying assumptions made in the calculations. It is also concluded that the theoretical formula derived by Halpern and Strutinski (Proceedings Second in the United Nations Conference on the Peaceful Uses of Atomic Energy v. 5, Geneva, 1958, p. 408) and their ideas concerning the causes of the connection between the angular anisotropy and R are valid for U^{238} fissioned by 14-Mev neutrons. Orig. art. has: 1 figure, 3 formulas, and 1 table.

ASSOCIATION: Fiziko-tekhnicheskiy institut im. A. F. Ioffe AN SSSR (Physicotechnical Institute, AN SSSR)

SUBMITTED: 27Feb65 ENCL: 00 SUB CODE: NP

NR REF SOV: 004 OTHER: 006

Card 2/2 BK

L 14104-66 EWT(1) IJP(c) AT

ACC NR: AP6004090 SOURCE CODE: UR/0020/66/166/002/0327/0329

AUTHOR: Komar, A. P.

ORG: Physicotechnical Institute im. A. F. Ioffe, Academy of Sciences (Fiziko-tekhnicheskiy institut AN SSSR) 42 43

TITLE: On the length of the molecular filaments at the tip of an electron projector which are responsible for "molecular" patterns

SOURCE: AN SSSR. Doklady, v. 166, no. 2, 1966, 327-329

TOPIC TAGS: electron emission, molecular spectrum, molecular structure, field emission microscope

ABSTRACT: Experimental studies have shown that the "molecular" patterns observed by Müller (E. W. Müller, Zs. Naturforsch., 5a, 473, 1950) are due to adsorption of a nonhomogeneous layer of materials with delocalized electron bonds on the cold tip of the electron projector. Electron emission from the adsorbed material is interpreted as emission from a layer on which projecting molecular filaments oriented in the electric field transmit electron waves from the metal substrate in a manner similar

21, 44, 55

Card 1/2

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UDC: 621.380

L 14104-66

ACC NR: AP6004090

to the action of hollow metal for solid dielectric waveguides in transmitting electromagnetic waves. The transverse dimensions of these filaments have already been determined to be approximately $8.5 \cdot 10^{-8}$ cm. The author proposes a method for determining their longitudinal dimensions. An equation is derived for the electric field strength at the hemispherical end of a cylindrical conducting filament with a given radius. A relationship is established between this field strength and the length of the filament. Using the most probable experimental data, the author determines the length of the filament as approximately $2.82 \cdot 10^{-7}$ cm. Experimental data on the strength of the filament and on electric field intensity confirm these data. The results indicate that the waveguide theory of "molecular" patterns is essentially true. Orig. art. has: 1 figure, 10 formulas.

SUB CODE: 20/ SUBM DATE: 18Sep65/ ORIG REF: 008/ OTH REF: 005

FW

Card 2/2

L 6411-66 EWT(m)/T/EWP(t)/EWP(z)/EWP(b)/EWA(c) IJP(c) JD/HW/JG

ACC NR: AP5027409 SOURCE CODE: UR/0181/65/007/011/3310/3319

AUTHOR: Komar, A. P.; Syutkin, N. N.

ORG: Physicotechnical Institute, AN SSSR, Leningrad (Fiziko-tekhnicheskiy institut im. A. F. Ioffe AN SSSR)

TITLE: Field emission microscopy of Ni-Be alloy

SOURCE: Fizika tverdogo tela, v. 7, no. 11, 1965, 3310-3319

TOPIC TAGS: beryllium base alloy, nickel alloy, field emission microscope, solid solution

ABSTRACT: The paper is a continuation of a previous article (A. P. Komar, N. N. Syutkin, *DAN SSSR*, 150, 1029, 1963) on the use of the field emission microscope for studying both surface and bulk dissolution of supersaturated binary solid solutions. In this previous work, some preliminary results of studies on the Ni-Be system were given. In the present paper, more detailed data are given from a further study of the same alloy. Field emission photomicrographs are taken of hardened and tempered specimens after holding at various temperatures. A study of these photographs shows

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L 6411-66
ACC NR: AP5027409

that dissolution of the supersaturated alloy begins with enrichment of the Be surface and subsequent formation of nuclei for the new phase. The generation of these nuclei is statistic in nature with a probability which differs in various sections of the crystal. The new phase coagulates in a regular manner: parallel to the [110] zone and in the form of rosettes close to faces [111] and [100]. Individual sections of NiBe may move along the surface of the specimen as a unit for a considerable distance with something similar to Brownian motion. The NiBe sections on the surface of the specimen are flat formations with a thickness of no less than one layer of atoms. The aging process on the surface is continuous from the initial stages to complete dissolution of the alloying component. The work function of the NiBe phase is less than the work function of pure Ni and Be independently of the linear dimensions beginning at 20 angstroms. Orig. art. has: 6 figures.

SUB CODE: SS,MM/ SUBM DATE: 01Jun65/ ORIG REF: 010/ OTH REF: 002

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000824020009-6

ACC NR: AP5019832 UR/0048/65/029/007/1227/1232

...khazov, G. D.; Vorob'yev, A. A.; Komar, A. P.

... the maximum resolution of semiconductor detectors (Report, 15th Annual ... on Nuclear Spectroscopy & Nuclear Structure held in Minsk, 25 Jan-2 Feb ...

... SSR. Izvestiya. Seriya fizicheskaya, v. 29, ... 1965, 1227-1232

... silicon semiconductor, germanium semiconductor ... semiconductor device, ...ector, semiconductor detector, radi...

... authors calculate the ratio of the mean square deviation ... electron-hole pairs produ... ... the Fano coefficient ... The calculation is performed by the method of U.Fano (Phys. Rev. 72, ... the assumption that the ionization process is correctly described by ... W.Shockley (Uspekhi fiz. nauk 77, 1, 1962). The Fano method, although ... good results for gas ionization, is a poor approximation for semi... for the method to be valid it would be necessary either for there to be ...on by delta-electons or for the ionization by delta-electrons to pre-

ACCESSION NR: AP5019832

3

dominate over ionization by primaries and to be independent of energy. The authors estimate the error of their calculations for Si and Ge to be 10%. The calculated Fano coefficient for Ge was found to be in reasonable agreement with experimental ...ned with particle detectors by W.Hansen and ... (UCRL-1159, 1964) ...wan and A.J.Tavendale (Can. J. Phys., 41, ..., ...). The calculated ...ient for Si, however, was considerably smaller than the experimental ...ed by J.L.Blankenship and W.F.Mruk (Bull. Amer. Phys. Soc. Ser. 2, 9, 1, ...). It is concluded that very ... with Ge detectors, but that Si dete... is currently ... further improved. ...ns indicate a temperature dependence of ... coefficient which it ...interest to test experimentally. The ... also indicate that ... are capable of considerably higher ... detectors. "In ... the authors consider it their pleasant ... express their gratitude ...an and O.A. Matveyev for valuable discussions and remarks." Orig. art. ...mulas and 1 table.

[15]

Fiziko-tekhnicheskiy institut im. A.F.Ioffe ... Institute, Academy of Scien... SSR

AP5019832

ENCL: 00

SUB CODE: NP, FC

003

OTHER: 006

4064

L 11427-67 EWT(m)
ACC NR: AP6031275 SOURCE CODE: UR/0057/66/036/009/1710/1717

AUTHOR: Komar,A.P.; Kruglov,S.P.; Lopatin, I.V. 23

ORG: Physicotechnical Institute im. A.F.Ioffe, AN SSSR, Leningrad (Fiziko-tekhnicheskiy institut AN SSSR) 19

TITLE: A new type of quantometer (Gauss quantometer)for measuring bremsstrahlung beam energies

SOURCE: Zhurnal tekhnicheskoy fiziki, v. 36, no. 9, 1966, 1710-1717

TOPIC TAGS: nuclear physics apparatus, bremsstrahlung, energy, measuring apparatus

ABSTRACT: The authors discuss the design, construction, and performance of an automatic integrating quantometer for direct measurement of the energies of bremsstrahlung beams, analogous to the quantometer of R.R.Wilson (Nucl. Instr., 1,101, 1957). The suitability of different numerical integration formulas for integrating the copper transition curve is discussed, and it is concluded that Gauss' formula is the most advantageous. The described instrument employs seven copper absorbers with thicknesses ranging between 0.405 and 2.863 cm and gaps between them ranging between 0.104 and 0.284 cm. The absorber thicknesses and gap widths were selected in accordance with Gauss' integration formula. The instrument can be hermetically sealed and is designed to accommodate a 10 cm diameter beam. When filled with air at atmospheric pressure the sensitivity of the instrument is 0.877×10^{-19} C/MeV, The sensitivity was found experimentally to

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UDC: 539.074.22

ACC NR: AP6031275

vary by less than 2% for bremsstrahlung beams with maximum energies from 15 to 650 MeV. The maximum beam power that can be measured with air filling is 10^{-3} W/cm^2 at a pulse rate of 50 Hz; by using a rare gas filling the maximum power that can be measured can be increased by a factor of 10^3. The instrument can also be used to measure the powers of high energy electron beams. Orib. art. has: 8 formulas, 4 figures, and 1 table.

SUB CODE: 20 SUBM DATE: 22Nov65 ORIG. REF: 005 OTH REF: 004

Card 2/2 bab

L 07920-67 EWT(m)/EWP(t)/ETI IJP(c) JD

ACC NR: AP6030654 SOURCE CODE: UR/0020/66/169/006/1307/1310

AUTHOR: Komar, A. P. (Academician UkrSSR); Denisov, V. P.; Kul'chitskiy, L. A. 44 B

ORG: Physicotechnical Institute im. A. F. Ioffe, Academy of Sciences SSSR (Fiziko-tekhnicheskiy institut Akademii nauk SSSR)

TITLE: Investigation of the photodisintegration of the nucleus, O^{16}

SOURCE: AN SSSR. Doklady, v. 169, no. 6, 1966, 1307-1310

TOPIC TAGS: oxygen, nitrogen, integral cross section, transition probability, photonuclear reaction, gamma ray absorption, resonance absorption

ABSTRACT: The authors report results of investigations of the transition probability and different states of the final nucleus N^{15} obtained by photodisintegration of O^{16}, and the integral cross section for total absorption of γ quanta above the region of giant resonance (up to 55 Mev). The research consisted of measuring and analyzing the energy spectra of the photoprotons of the reaction (γ, p) in the energy interval $E_{\gamma max}$ from 21.3 to 55.0 Mev. The protons were registered at 90° relative to the direction of the bremsstrahlung beam, by a telescope consisting of a proportional counter (front) and a scintillation counter with NaI(Tl) crystal (back). Details of the measurement methods are given elsewhere (Pribory i tekhn. eksp. no 3, 67, 1965). The results show that the intensity of the transitions to the levels of positive parity (5.28 and 5.30 Mev) of the N^{15} (produced in the reaction $O^{16}(\gamma, p)N^{15}$) are commensurate with the intensities of the transitions to levels of negative parity.

Card 1/2 UDC: 539.172.3

L 07920-67

ACC NR: AP6030654

The integral cross section was 127 Mev-mb up to 37 Mev, 166 Mev-mb up to 35 Mev, and 240 Mev-mb up to 55 Mev. The last two quantities agree well with published data by others. The results show that whereas for heavy and medium nuclei almost the entire integral photo absorption corss section is contained in the region of the giant resonance, for O^{16} more than half of the integral cross section is in the region of higher γ-quantum energies. Orig. art. has: 1 figure, 1 formula, and 1 table.

SUB CODE: 20/ SUBM DATE: 16May66/ ORIG REF: 005/ OTH REF: 017

Card 2/2 vmb

L 04421-67 EWT(l)/EWT(m)/T/EWP(t)/ETI IJP(c) JD/GG/AT

ACC NR: AP6034266 SOURCE CODE: UR/0386/66/004/007/0241/0243

AUTHOR: Grachev, B. D.; Komar, A. P.; Korobochko, Yu. S.; Mineyev, V. I.

ORG: Leningrad Polytechnic Institute im. M. I. Kalinin (Leningradskiy politekhnicheskiy institut)

TITLE: Electron focusing in thin single-crystal copper films

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki. Pis'ma v redaktsiyu. Prilozheniye, v. 4, No. 7, 1966, 241-243

TOPIC TAGS: fiber crystal, copper whisker, electron optics, electron reflection, electron diffraction analysis

ABSTRACT: To check on the possible focusing of electrons passing through a single crystal, in analogy with the already observed focusing of protons by chains of atoms in a crystal, the authors investigated the yield of K radiation from a thin (400 - 600 Å) single-crystal film of copper bombarded with 20 - 60 kev electrons. The measurements were by an electron diffraction technique, with the film secured on a rotary device which made it possible to set its inclination relative to the electron beam accurate to < 0.5°. The alignment of the beam direction with the principal crystallographic axes was determined from the electron-diffraction pattern. The copper L photons were counted with a proportional counter whose entrance window was set at an angle of 80° relative to the electron-beam direction in the plane defined by the beam axis and the film rotation axis. The range of photon energies corresponding to the

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L 04421-67

ACC NR: AP6034266

copper K radiation was separated with a single-channel pulse-height analyzer. The number of electrons scattered through 80° exceeded by a factor 100 - 1000 the number of photons entering the counter. Plots of the copper K-radiation and of the number of electrons scattered through 80° vs. the angle of film rotation exhibited peaks corresponding to the direction of motion of the primary electrons along the crystal axes and revealed a relative increase in the K-radiation yield of 15 - 20%, as against ~50% in the case of protons. The difference is attributed to the stronger scattering of the electrons in the substance, and in part also to the mosaic structure of the film. It is proposed that the difference between the electron and proton motions is caused also by the fact that as the protons move through the channel they execute a certain number of oscillations during their travel, whereas for the electrons ordered motion takes place probably only during the first quarter of the oscillation, after which the electron is scattered through a large angle. It is possible that this circumstance plays a certain role in the nonmonotonic angular dependence of the yield of secondary electrons from MgO and Ti single crystals, as observed elsewhere. Orig. art. has: 1 figure.

SUB CODE: 20/ SUBM DATE: 04Jun66/ ORIG REF: 001/ OTH REF: 003

awm

Card 2/2

L 40906-66 EWT(m)

ACC NR: AP6030184 SOURCE CODE: UR/0020/66/167/006/1263/1265

AUTHOR: Bazhanov, Ye. B.; Komar, A. P. (Academician An UkrSSR); Kulikov, A. V.; Ogurtsov, V. I.

ORG: Physicotechnical Institute im. A. F. Ioffe, AN SSSR (Fiziko-tekhnicheskiy institut AN SSSR)

TITLE: Cross section of Ca sup 40 photoneutron reactions

SOURCE: AN SSSR. Doklady, v. 167, no. 6, 1966, 1263-1265

TOPIC TAGS: photoneutron, neutron reaction, radiation spectrum, neutron cross section

ABSTRACT: Experiments were performed on the synchrotron of the Physics-Engineering Institute imeni A. F. Ioffe, USSR Academy of Sciences, regarding the summary cross section of photoneutron reactions on the Ca^{40} nucleus from the threshold of γn reactions (15.62 Mev) to 50 Mev. The authors measured the yield of photoneutrons vs. maximal γ-radiation retardation spectrum energy $E_{\gamma max}$ with a recording interval of 1 Mev. The results are presented graphically. The curve of the photoneutron reaction cross sections in the Ca^{40} nucleus has, in addition to a gigantic resonance at slightly below 22 Mev, maximums in the energy level areas of 22.5-24.0 Mev and 26-28 Mev. There may be also a wide max at around 33 Mev. Both the 22.5-24.0 and 26-28 Mev peaks are above the (γpn) reaction threshold and may possibly correspond to this reaction. The 26-28 Mev max has not been noted earlier in studies of the γn reaction. The results of other experimental and theoretical works in the area are mentioned briefly. Orig. art. has: 1 figure and 1 table. [JPRS: 36,364]

SUB CODE: 20 / SUBM DATE: 15Dec65 / ORIG REF: 005 / OTH REF: 015

Card 1/1 0072

UDC: 539.172.3

0918 1025

L 43026-66 EWT(1)
ACC NR: AP6030012 SOURCE CODE: UR/0020/66/169/005/1052/1053

AUTHOR: Komar, A. P. (Academician AN UkrSSR); Stabnikov, M. V.; Turukhano, B. G.

ORG: Physicotechnical institute im. A. F. Ioffe, Academy of Sciences SSSR (Fiziko-tekhnicheskiy institut Akademii nauk SSSR)

49
B

TITLE: Image reconstruction of transparent and refractive objects by means of phase holograms 25

SOURCE: AN SSSR. Doklady, v. 169, no. 5, 1966, 1052-1053

TOPIC TAGS: laser photography, holography, image ~~reconstruction, hologram~~ amplification, photographic image

ABSTRACT: Holograms of transparent and refractive objects (snapshots, bubbles in liquids or glasses, and water droplets) were obtained by means of a setup using a single-mode He-Ne laser operating at 6328 Å (see Fig. 1). To avoid loss of image quality

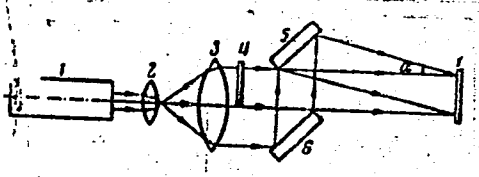


Fig. 1. Setup for obtaining holograms

1 - He-Ne laser; 2 and 3 - diverging lenses; 4 - object; 5 and 6 - beam splitter mirrors; 7 - film; α - angle subtended on a mirror by the image.

Card 1/2

UDC: 621.375.8:539.1.073

L 30032-66 EWT(m)

ACC NR: AP6020113 SOURCE CODE: UR/0367/66/003/002/0277/0282

AUTHOR: Volkov, Yu. M.; Komar, A. P.; Chizhov, V. P.

ORG: Physicotechnical Institute im. A. F. Ioffe, AN SSSR (Fiziko-tekhnicheskiy institut AN SSSR)

TITLE: Excitation functions for Be sup 9 (gamma, p), Be sup 9 (gamma, d), Be sup 9 (gamma, t), O sup 16 (gamma, d) and Cu (gamma, d) reactions in which particles of fixed energies are emitted

SOURCE: Yadernaya fizika, v. 3, no. 2, 1966, 277-282

TOPIC TAGS: excitation energy, differential cross section, deuteron, proton, nuclear reaction, beryllium, copper, gamma quantum

ABSTRACT: Differential cross-sections are given as functions of the γ-quantum energy for the reactions $Be^9(\gamma, d)$, $Be^9(\gamma, d)$, and $Be^9(\gamma, t)$ with the emission of particles having a mean energy~5 MeV, and for the reaction $O^{16}(\gamma, d)$ with the emission of deuterons and protons with energies from 3.6 to 5.2 MeV in the photodisintegration of Cu are given. Orig. art. has: 3 figures and 2 tables. [Based on authors' Eng. abst.] [JPRS]

SUB CODE: 20 / SUBM DATE: 23Jul65 / ORIG REF: 003 / OTH REF: 007

Card 1/1

L 26587-66 EWT(m) DIAAP

ACC NR: AP6011428 SOURCE CODE: UR/0020/66/167/004/0785/0788

AUTHORS: Komar, A. P. (Academician AN UkrSSR); Kruglov, S. P.; Lopatin, I. V.

ORG: Physicotechnical Institute im. A. F. Ioffe, Academy of Sciences, SSSR, Leningrad (Fiziko-tekhnicheskiy institut Akademii nauk SSSR)

TITLE: A new instrument for determining the intensity of gamma radiation -- Gauss quantum meter

SOURCE: AN SSSR. Doklady, v. 167, no. 4, 1966, 785-788

TOPIC TAGS: gamma radiation, radiation intensity, radiation instrument, quantum device

ABSTRACT: The authors describe an instrument in which the intensity of γ radiation, as measured by its absorption in a substance, is determined integrating the area under the transition curves. The integration is by means of a quadrature formula under the main area of the curve and by means of a six-point Gaussian approximation. The thicknesses of the absorbing copper plates and the widths of the gaps between them are calculated to obtain the best quadrature integration.

Card 1/3 UDC: 621.387.422:539.122

L 26587-66
ACC NR: AP6011428

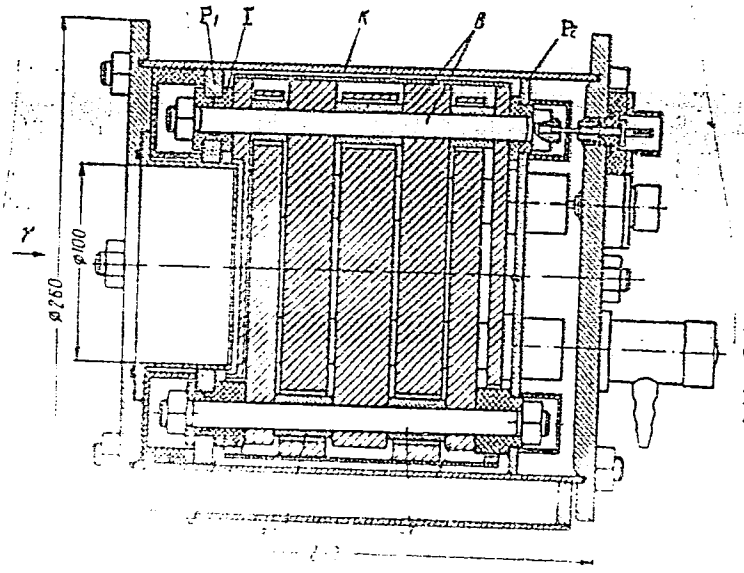


Fig. 1. Construction of new quantum meter. B -- high voltage electrodes; C -- gathering electrodes; BT -- spacer bushings; I -- insulators; K -- outer jacket; P_1, P_2 -- front and back panels of the quantum meter.

L 26587-66
ACC NR: AP6011428

The new quantum meter (Fig. 1) was experimentally checked for sensitivity against data obtained by the calorimetric method in the range of γ energy from 15 to 80 Mev and at 650 Mev and was found to be accurate to 2 -- 3%. The results show that the use of the Gauss quadrature formula results in a quantum meter with a smaller number of plates, with constant sensitivity at all bremsstrahlumg end-point energies larger than 15 Mev, and which does not lose sensitivity at energies below 100 Mev like the Wilson quantum meter. Orig. art. has: 2 figures and 8 formulas.

SUB CODE: 20/ SUBM DATE: 18 Sep65/ ORIG REF: 003/ OTH REF: 004

Card 3/3 BLG

KOMAR, E.; NAUMAN, A.

Observations on the effect of para-aminosalicylic acid in vitro on the decrease of sedimentation rate (Biernacki's reaction); preliminary report. Gruzlica, Warszawa 18 no.3-4:461-468 July-Dec 50.
(CLML 20:7)

1. Of the Department of Alexander Naumann, M.D. of Warsaw Municipal Sanatorium in Otwock (Sanatorium Director--R. Kalinowski, M.D.).

KOMAR, E.

KALINOWSKI, R.; KOMAR, E.

Experiences with PAS in tuberculosis. Gruzlica, Warsz. 19 no. 4: 455-458 July-Aug. 1951 (CIML 21:3)

1. Of the Warsaw Municipal Sanatorium in Otwock (Director--Romuald Kalinowski, M. D.).

KOMAR, E.; HAUMAN, A.

Follow-up of patients treated in the sanatorium in 1947-50. Gruzlica, Warsz. 20 no.3:399-414; contd. May-June 1952. (CLML 23:2)

1. Of the Sanatorium imienia F. Dzierzynski (Director--Romuald Kalinowski, M. D.), Otwock. Study made for Institute of Tuberculosis (Director --Prof. J. Misiewicz, M.D.), Warsaw.

KOMAR, E.; NAUMAN, A.

Fate of patients treated in the sanatorium in 1947-1950. Gruzlica, Warsz. 20 no. 4:571-582;conol. July-Aug 1952. (CLML 23:3)

1. Of the Sanatorium imienia F. Dzierzynski (Director--Romuald Kalinowski, M.D.) in Otwock.
Study made at the request of the Institute of Tuberculosis.

KOMAR, Edward; RYBACZEWSKI, Stanislaw

α-Ethylthioisonicotinamide (Th-1314) in the treatment of prolonged pulmonary tuberculosis in adults. Gruzlica 28 no.10:775-781 '60.

1. Z Sanatorium im. F.Dzierzynskiego w Otwocku, Dyrektor: dr E.Komar.
(ANTITUBERCULOSIS AGENTS ther)

KOMAR, E.

Chief Engineer, Kirov Electric Machinery Plant.

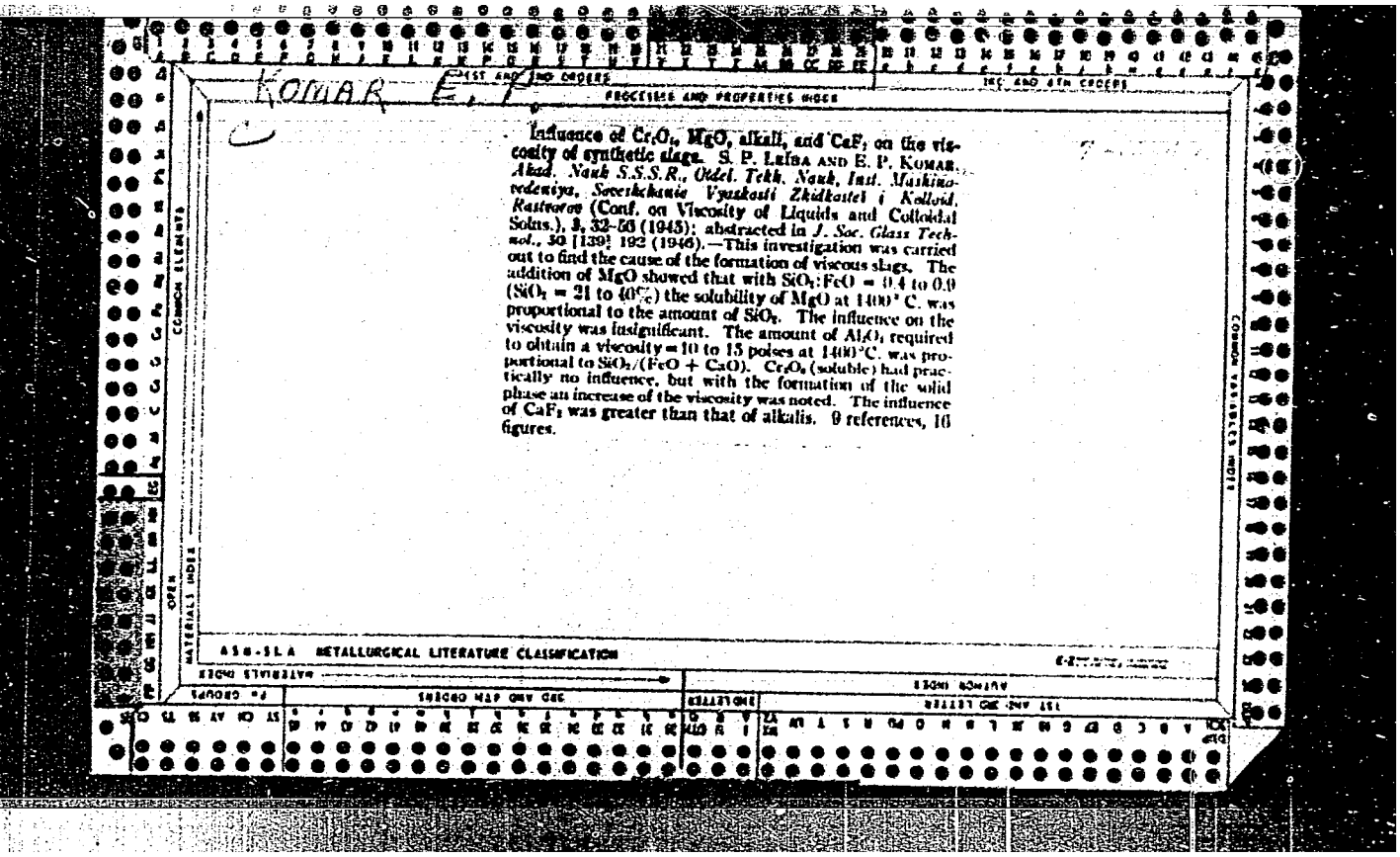
"Socialist Competition and Technical Progress," Izvestia, 1949.

Current Digest of the Soviet Press, Vol. 1, No. 17, 1949, page 48. (In [redacted] Library).

VEKSLER, V.J.; VODOPJANOV, A.F.; JEFREMOV, D.V.; MINC, A.Z.; VEISBEIN, M.M.; GASEV, M.G.; ZEJDLIC, A.J.; IVANOV, T.P.; KOLOMENSKIJ, A.A.; KOMAR, E. G.; MALYSEV, J.E.; MONOSZON, M.A.; NEVJAZSKIJ, J.Ch.; PETUCHOV, V.A.; RABINOVIC, V.A.; RUBCINSKIJ, S.N.; SINELNIKOV, K.D.; STOLOV, A.M.; KULT, Karel, inz.

The synchrophasotron for particle acceleration to 10 BeV energy of the Soviet Academy of Sciences. Jaderna energie 3 no.1:5-9 Ja '57.

1. Ustav jaderne fysiky (for Kult).



KOMAR E. P.

PROCESSES AND PROPERTIES INDEX

Influence of Cr_2O_3, MgO, alkali, and CaF_2 on the viscosity of synthetic slags. S. P. Lelba and E. P. Komar. *Akad. Nauk S.S.S.R., Otdel. Tekh. Nauk, Inst. Mashinovedeniya, Soveshchanie Vyazkosti Zhidkostei i Kolloid. Rastvorov* (Conf. on Viscosity of Liquids and Colloidal Solns.), **3**, 32-56 (1945); abstracted in *J. Soc. Glass Technol.*, **30** [139] 192 (1946).—This investigation was carried out to find the cause of the formation of viscous slags. The addition of MgO showed that with SiO_2:FeO = 0.4 to 0.9 (SiO_2 = 31 to 40%) the solubility of MgO at 1400° C. was proportional to the amount of SiO_2. The influence on the viscosity was insignificant. The amount of Al_2O_3 required to obtain a viscosity = 10 to 15 poises at 1400°C. was proportional to $SiO_2/(FeO + CaO)$. Cr_2O_3 (soluble) had practically no influence, but with the formation of the solid phase an increase of the viscosity was noted. The influence of CaF_2 was greater than that of alkalis. 9 references, 16 figures.

A56-51A METALLURGICAL LITERATURE CLASSIFICATION

KOMAR, G.A.

Nature of phylloclades of Ruscus hypophyllum L. Trudy Bot.inst. Ser. 7 no.5:57-76 '62. (MIRA 15:2)
(Ruscus) (Phyllocladia)

KOMAR, G.A.

Arils, their nature, structure and functions. Bot. zhur. 50 no.5:715-724 My '65. (MIRA 18:10)

1. Botanicheskiy institut imeni Komarova AN SSSR, Leningrad.

SAVCHENKO, M.I.; KOMAR, G.A.

Formation and significance of calcium oxalate crystals in plant cell. Trudy Bot.inst.Ser. 7 no.5:86-106 '62. (MIRA 15:2)
(Calcium oxalate) (Plant cells and tissues)

HUNGARY

KOMAR, Jozsef, Dr, KOMAR, Gyula, Jr., Dr; Capital City Istvan Hospital, Neurological Ward (LEHOCZKY, Tibor, Dr, professor) (Fovarosi Istvan Korhaz, Ideggosztaly), and Capital City Council Central Veterinary Hospital (director: ZOBORY, Emil, Dr) (Fovarosi Tanacs Kozponti Allatkorhaz).

"Comparative Clinical and Pathological Observations Related to Periodic Ataxia."

Budapest, Ideggyogyaszati Szemle, Vol XIX, No 9, Sep 66, pages 274-279.

Abstract: [Authors' Hungarian summary] Periodic ataxia was observed in a male patient and in a female cat. The man has been under clinical observation for 2 1/2 years, the cat was observed for a half year. Neither macroscopic nor microscopic changes were observed in the course of autopsy of the cat; the symptom complex was most probably an independent syndrome. Based on the comparative observations, certain deductions are made concerning the origin of the symptoms of the male patient as well. With respect to the pathomechanism it is presumed that, in addition to a "biochemical injury" to the cerebellum, the transient insufficiency of the vertebrobasilar arterial system is the cause of the clinical symptoms. The group of symptoms accompanying periodic ataxia is considered to be an independent syndrome by the authors on the basis of their observations. 2 Hungarian, 7 Western references.

1/1

nacs Vegrehajto Bizottsaga Kozponti Allatkorhaz, in Budapest (director: ZOBORY, Emil, Dr., Chief Veterinarian).

"Spinal Marrow Injury in a Cat Caused by Electrical Shock"

Magyar Allatorvosok Lapja, Vol 21, No 5, May 1966, pp 228-229.

Abstract: This article described the case of a 10-year old male cat that was exposed to an electrical shock of 220 volts. Clinical examination disclosed spinal electrotraumatical lesion, resulting in Panse-type spinal atrophy and paralysis. Blood was observed in the grey matter in the spinal marrow. A general discussion was made on the effects of electrical shock. 19 references, including 14 German and 5 Western.

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KOMAR, Gyula, dr. (Jr), kerületi állatorvos

Neurological syndrome in a dog causing myelopathy. Magy allatorv lap 19 no.5:207-209 My '64

1. Central Animal Hospital, Budapest Capital City Executive Committee (Director: Dr. Emil Zobory).

HUNGARY

KOMAR, Gyula, Jr, Dr, district veterinarian (keruleti allatorvos); Central Veterinary Hospital (Kozponti Allatkorhaz), V. B. [Abbreviation not identified], of the Budapest City Council (Budapesti Fovarosi Tanacs) (director: ZOBORY, Emil, Dr, chief-veterinarian (foallatorvos)).

"Temporal Epilepsy of the Dog Caused by a Brain Tumor."

Budapest, Magyar Allatorvosok Lapja, Vol 18, No 2, Feb 63, pp 34-36.

Abstract: [Author's English summary] Temporal epilepsy is reported in a six year old dog. On the basis of clinical symptoms (automatic movement disorders in a state of unconsciousness, paroxysmal character of fainting) and the effectiveness of anticonvulsive drugs, a well-grounded suspicion arose for the presence of a brain tumor which was proved by a pathological and histological investigation. The tumor was shown histologically to be an astrocytoma malignum. Of 17 references, three are Hungarian, the rest is Western.

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KOMAR, Gyula, Jr., Dr, district veterinary; Central Veterinary Hospital of the Executive Committee of the Capital City Council of Budapest (Budapest Fovarosi V.B. Kozponti Allatkorhaz) (director: ZOBORI, Emil, Dr, chief veterinary).

"Neurofibroma in the Acoustic Nerve of a Dog."

Budapest, Magyar Allatorvosok Lapja, Vol 18, No 9, Sept 63, pages 375-377.

Abstract: [Author's English summary modified] The clinical symptoms observed in a case of acoustic neoplasm: impaired hearing on the same side, deviation, paresthesia on the trigeminal region, unusual position of the head and pyramidal lesions on the same side, are described by the author. The differential diagnosis from other conditions, such as cerebellar pons arachnitis, is difficult. In this case, the exact diagnosis was made by dissection. The section revealed the presence of a neoplasm in the acoustic nerve trunk in the corner of the cerebellum and pons. No macroscopic lesions have been found in the other peripheric nerves. Widespread growth of the Schwann cells and the endo- and perineurium was seen on histologic examination. The cells showed a distribution characteristic of neurofibromas and loose fibrous connective tissue was found among the bundles. 1 Hungarian, 12 Western references.

1/1

KOMAR, Gyula, dr (Jr)

A new instrument for fowl blood test. Magy allatorv lap 17 no.8: 305 Ag '62.

1. Keruleti allatorvos, Budapest.

Investigation of the antibiotic [illegible]etain. S. K[illegible], [illegible], W. Chwistecka, E. [illegible], H. K[illegible] [illegible] (Zaklad Mikrobiol. [illegible]) [illegible] *Acta Polon. Pharm.* [illegible] an antibiotic, was obtained from lucose-potato [illegible] [illegible]lated at 28° with *Bacillus pumilus* 41 which, however, [illegible] ferment maltose or xylose and hydrolyzed gel[illegible] [illegible] greater degree than normal. The inoculated medium [illegible]

centrifuged after 72 hrs., adjusted to pH 0.5 with [illegible] treated with 2% active C, the active eluate [illegible] [illegible] by vacuum distn., purified by adsorption on [illegible] [illegible] with H_2O, and finally subjected to Craig countercurrent distributions with the phases H_2O satd. with [illegible] [illegible] satd. with H_2O until a pure product was obtained. After removing PhOH, AcOH, and CO_2 the [illegible] [illegible] concentrated and the colorless [illegible] [illegible]. From [illegible] 5 mg. of pure [illegible] was obtained [illegible] [illegible], [illegible], very hygroscopic, [illegible] with greater stability in soln., was [illegible] [illegible] ether, acetone, C_6H_6, BuOH, PrOH [illegible] [illegible] PhOH satd. with H_2O, ethylene glycol [illegible] [illegible] acid or SH groups, was not [illegible] [illegible] salt, Na tungstate [illegible], had no S [illegible] N [illegible]% amino N, gave pos. ninhydrin test, [illegible] through a collodion membrane, was insensitive to [illegible] [illegible] inactivated by serum, slightly toxic [illegible] [illegible] against *Shigella*, *Salmonella*, *Proteus*, [illegible] *Micrococcus pyogenes* var. *aureus*, non-hemolytic strep[illegible] [illegible]. It was most active against *Shigella dysenteriae*.

L. J. Piotrowski

KOMAR, I.

Development of the productive forces of the Ural region, and new changes in the geography of its economy. p. 200.

ANALELE ROMINO-SOVIETICE. SERIA GEOLOGIE-GOEGRAFIE. Bucuresti, Rumania
Vol. 12, no. 2, Apr./June 1959.

Monthly List of East European Accessions (EEAI) LC, Vol. 9, no. 1, January 1960 .

Uncl.

KOMAR, I. V.

Transport Bashkirskoi ASSR. [Transportation in Bashkir ASSR]. (Bol. sov. ents., 2. ed., 1950, v. 4, p. 352).

DLC: AE55.B62

SIL

KOMAR, Igor Valeryanovich; ASOYAN, N.S., redaktor; RIVINA, I.N., tekhnicheskiy redaktor.

Sverdlovsk. Moskva, Gos. izd-vo geogr. lit-ry, 1954. 97 p.
(Sverdlovsk--Description) (MIRA 8:3)

Komar, I.V.

BELYUKAS,K.K., doktor geograficheskikh nauk, redaktor; BULAVAS,Yu.I., kandidat istoricheskikh nauk, redaktor; KOMAR,I.V., kandidat geograficheskikh nauk, redaktor; KONOVALYUK,U.K., redaktor; GLEYKH,D.A., tekhnicheskiy redaktor

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(Lithuania--Geography)

KOKOSOV, N.M.; NIKULIN, V.I.; KHARIN, V.I.; KOMAR, I.V., starshiy nauchnyy sotrudnik, otvetstvennyy redaktor; DOLGUSHIN, L.D., starshiy nauchnyy sotrudnik, otvetstvennyy redaktor

[The Khanti-Mansi National Area; a sketch of its natural resources and economy] Khanty-Mansiiskii natsional'nyi okrug; ocherk prirody i khoziaistva. Sverdlovsk, Izd-vo Akademii nauk SSSR, Ural'skii filial 1956. 102 p. (MLRA 9:10)

1. Institut geografii Akademii nauk SSSR (for Komar, Dolgushin)
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KOMAR, I.V. КОМАР, И. В.

Boundaries of the Ural economic region . Izv. AN SSSR. Ser. Geog. no.3:23-31 My-Je '57. (MIRA 10:12)

1. Institut geografii AN SSSR.
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26-11-15/16

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TITLE: The Industrial Ural (Industrial'nyy Ural)

PERIODICAL: Priroda, 1957, # 11, p 125-134 (USSR)

ABSTRACT: The author gives a detailed description of the Ural Mountains and their geographical and geological structure. During the 18th century, the Ural was already famous for its iron and other minerals, some of which were found there for the first time and named after local geographical designations. Soviet geologists discovered deposits of over 1,000 different kinds of minerals, the most common being iron of which the Ural produces 20% of the Soviet Union's entire output; 15-20% of copper and chromites, 10% of nickel, 40% to 90% of bauxite, potassium and magnesium salts, graphite, magnesite, pyrite etc. The Ural is also known for its large deposits of platinum, gold, abrasives and for many varieties of excellent marbles and other stone materials. The coal deposits are located on both slopes of the 2,000 km long mountain range. The yearly output surpasses 60 million tons. The pride of Soviet science and engineering is the vast oil industry in

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