PAFOMOV, V.Ye.

Transient radiation in the case of oblique. Izv. vys. ucheb. zav; radiofiz. 5 no.3:484-489 '62. (MIRA 15:7)

1. Fizicheskiy institut imeni P.N.Lebedeva AN SSSR.
(Electromagnetic waves)

PAFOMOV, V.Ye.

Radiation from a charged particle moving through plates. Zhur. eksp. i teor. fiz. 39 no. 1:134-137 Jl '60. (MIRA 13:12)

1. Fizicheskiy institut imeni P.N. Lebedeva AN SSSR.
(Electron optics)

84701

S/020/60/133/006/003/016
B019/B054

24,2500 (1143, 1144, 1482)

AUTHOR: Pafomov, V. Ye.

TITLE: Influence of Multiple Scattering on Transition Radiation

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 133, No. 6, pp. 1315-1318

TEXT: In the introduction, the author briefly explains the generation of transition radiation during the motion of charged particles through the interface of two media. He points to the increase in energy of transition radiation which in the relativistic case is proportional to the increase in energy of particles, and describes the production of transition radiation quanta. He studies the motion of a point charge through the surface separating a medium from the vacuum; he proceeds from formula (1) for the amplitude of the spherical wave field of transition radiation. Here, the field amplitude is proportional to the path length difference of the coherent interaction of particles with the waves in the vacuum and in the medium, which depends on the angle between the direction of wave propagation and the direction of motion of particles. With the use

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Influence of Multiple Scattering on Transition Radiation

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of the definitions $\omega_0^2 = 4\pi e^2 N/m$, $\omega_{cr} = \omega_0 E/\mu c^2$, and $\omega_{cr}^* = E_s^2 E^2 c/(\mu c^3)^4 L$, where E is the total energy of particles, $E_s = 21 \cdot 10^6$ ev, μ the rest mass of the particles, and L the unit of radiation length, as well as $E' = (\omega_0 L/c) \cdot (\mu c^2)^3/E_s^2$, the author derives a formula for the cases E smaller than E', formula (7) for $E \gg E'$, formula (8) for $E > E'$, and a formula for the spectral densities of the radiation energy for $E \sim E'$. From these investigations it appears, among other things, that for frequencies $\omega < \omega_{cr}$ the field of transition radiation is mainly formed on the way in the vacuum. Thus, multiple scattering does not reduce the probability of emission of transition quanta. Multiple scattering is of considerable importance if, on the way $s_v \sim c/\omega (E/\mu c^2)^2$ of the coherent interaction of particles with the waves in the vacuum, the particles move out under the angle $\vartheta \sim \mu c^2/E$. In this case, new frequencies, for which $\omega_{cr} < \omega < \omega_{cr}^*$ holds, appear in the spectrum. Further, E' is the particle

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Influence of Multiple Scattering on Transition Radiation

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energy at which $\omega_{or} = \omega^{*}_{or}$. There are 5 Soviet references.

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

PRESENTED: April 14, 1960, by D. V. Skobel'tsyn, Academician

SUBMITTED: March 30, 1960

Card 3/3

SOV/26-58-12-2/44

AUTHOR: Pafomov, V.Ye., Candidate of Physical and Mathematical Sciences

TITLE: An Outstanding Discovery of Soviet Physicists (Vydayushcheyesya otkrytiye sovetskikh fizikov) A Contribution to the Award of the Nobel Prize for Physics for 1958 to P.A. Cherenkov, I.Ye. Tamm and I.M. Frank (K prisuzhdeniyu nobelevskoy premii po fizike za 1958 g. P.A. Cherenkovu, I.Ye. Tammu i I.M. Franku)

PERIODICAL: Priroda, 1958, Nr 12, pp 11-14 (USSR)

ABSTRACT: The article sketches briefly in popular language the Cherenkov effect. Ye.M. Brumberg and S.I. Vavilov did preliminary research. The successful development of this work by P.A. Cherenkov, I.Ye. Tamm and I.M. Frank led to their receiving the Nobel Prize for physics for 1958.
There are 2 diagrams and 3 photos.

ASSOCIATION: Fizicheskiy institut im. P.N. Lebedeva AN SSSR, Moskva (The Physics Institute imeni P.N. Lebedev, AS USSR, Moscow)

Card 1/1

PAFOMOV, V. Ye., Cand Phys-Math Sci -- (diss) "The theory of Vavilov-Cherenkov radiation in anisotropic media in the presence of limitations." Mos, 1958. 7 pp. (Acad Sci USSR, Phys Inst im P. N. Lebedev), 125 copies. Bibliogr at end of text (15 titles). (KL, 9-58, 113)

21(7)

AUTHORS: Agranovich, V. N., Pafomov, V. Ye., Rukhadze, A. A.

SOV/56-36-1-32/62

TITLE: On the Cherenkov Radiation of an Electron Moving in a Medium With Spatial Dispersion (O cherenkovskom izluchenii elektrona, dvizhushchegosya v srede s prostranstvennoy dispersiyey)

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1959, Vol 36, Nr 1, pp 238-243 (USSR)

ABSTRACT: The present paper deals with Vavilov-Cherenkov radiation in an isotropic gyrotropic medium in consideration of spatial dispersion. The formula for the total losses, which corresponds to this case, is written down. In consideration of spatial dispersion, Cherenkov radiation propagates on the surface of cones with the aperture angle ϑ_1. The next chapter of this paper deals with the distribution of intensities over these cones. The formula for the total intensity of Cherenkov radiation here takes the form of a sum of the intensities distributed over the individual Cherenkov cones. For a more intense study of the distribution of the intensity of Cherenkov radiation, the author investigates several possibilities of taking the spatial dispersion of the medium into account. For

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frequency ranges which are far from the eigenfrequencies of the medium it is possible to determine the solution for the decomposition of "direct" dispersion. Within this frequency range it holds uniquely that $n^2(\omega) = \varepsilon_0(\omega)/(1+\alpha(\omega))$, and Cherenkov radiation will be distributed over the surface of a single cone. In the domains near the eigenfrequencies of the medium, spatial dispersion may be of essential influence and in this case a development of the "inverse" dispersion must be used. Assuming that the condition $\varepsilon_0^2|\beta| \ll 1$ holds, one may say that Cherenkov radiation is concentrated almost entirely upon the first cone. Also with $\beta > 0$ Cherenkov radiation is distributed over one cone, but with $\beta < 0$ it is distributed over two. In nongyrotropic media the new Cherenkov radiation is real only in the immediate neighborhood of the absorption line center, and in this case the new Cherenkov radiation is of the same order of magnitude as the intensity of the ordinary Cherenkov radiation. In real substances Cherenkov radiation

On the Cherenkov Radiation of an Electron Moving in a Medium With Spatial Dispersion SOV/56-36-1-32/62

in this work and for discussions. There are 5 Soviet references.

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

SUBMITTED: July 10, 1958

Card 4/4

PAFOMOV, V.Ye.

Radiation of a point charge moving along the boundary between two media. Zhur. eksp. i teor. fiz. 32 no.3:610 Mr '57. (MIRA 10:11)

1. Fizicheskiy institut im. P.N. Lebedeva AN SSSR.
(Electrons)

PAFOMOV, V. YE

56-4-53/

AUTHOR: Pafomov, V.Ye.

TITLE: The Radiation of an Electron Flowing Through a Plate (Izlucheniye elektrona, proletayushchego cherez plastinku) (Letter to the editor)

PERIODICAL: Zhurnal Eksperim. i Teoret. Fiziki, 1957, Vol. 33, Nr 4, pp. 1074 - 1075 (USSR)

ABSTRACT: When an electron moves in an inhomogeneous medium, the so-called transition radiation develops. The angular distribution is calculated for a radiation which develops when a charge moves perpenticular to a plate. The analysis of the solution shows that for a non-relativistic electron the intensity distribution of the radiation is the same forward and backwards. When the thickness of the plate is greater than the wave length, an interference maximum exists. When the velocity of electrons is thus that $\varepsilon \beta^2 > 1$ applies, the Cherenkov radiation develops in the plate. There are 3 Slavic references.

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PAFOMOV, V.Ye.

Theory of Vavilov-Cherenkov radiation in anisotropic media and in the presence of boundaries. Trudy fiz. inst. 16:94-139 '61. (MIRA 15:2)

(Cherenkov radiation)

24(5) SOV/56-36-6-32/66

AUTHOR: Pafomov, V. Ye.

TITLE: On the Problem of Transition Radiation and the Vavilov-Cherenkov Radiation (K voprosu o perekhodnom izluchenii i izluchenii Vavilova-Cherenkova)

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1959, Vol 36, Nr 6, pp 1853-1858 (USSR)

ABSTRACT: Ginzburg and Frank (Ref 1) have already theoretically investigated the transition relation of charged particles moving perpendicularly through the plane boundary surface of two media with different dielectric constants. The author of the present paper carries out such calculations by taking magnetic susceptibility into account. The angular distribution of radiation emitted by a charged particle passing through the boundary between the vacuum and an isotropic ferrodielectric and between the vacuum and a uniaxial dielectric crystal is investigated, and it is shown that transition radiation depends essentially on group velocity. Transition radiation is dealt with in connection with such particular features of Cherenkov radiation as occur in crystals and also in isotropic media in the frequency range with a negative

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group velocity. The phenomena connected with the leading potential are discussed, and the connection between particle- and phase velocity is shown by means of a graph. Finally, the so-called "reversed" Doppler effect (shifting towards lower frequencies) is investigated; it follows from this reversed Doppler effect that, if a radiation source of an eigenfrequency equal to zero moves with a velocity exceeding the phase velocity of light, the energy of the Cherenkov radiation occurring in this connection is radiated under an obtuse angle with respect to the direction of motion. The author finally thanks V. L. Ginzburg for valuable advice and discussions. (Abstracter's note: The phenomenon described as Cherenkov radiation in Western publications is identical with that commonly called Vavilov-Cherenkov radiation in publications of Eastern countries). There are 1 figure and 10 references, 9 of which are Soviet.

PAFOMOV, V. Ye.

USSR/Radiophysics - Superhigh Frequencies, I-11

Abst Journal: Referat Zhur - Fizika, No 12, 1956, 35373

Author: Pafomov, V. Ye.

Institution: Physics Institute, Academy of Sciences USSR

Title: Cherenkov Radiation in Anisotropic Ferrites

Original Periodical: Zh. eksperim. i teor. fiziki, 1956, 30, No 4, 761-765

Abstract: The Hamilton method is used to investigate the radiation of an electric wave from a charge moving with a constant velocity, with a large phase velocity of light in an anisotropic dielectric. It is also shown that in the case of the anisotropic ferrite the radiation differs from the radiation in the case of the anisotropic dielectric, both with respect to the distribution of the intensities along the generatrices of the cones, as well as with respect to the radiation energy. In particular, the maximum intensity of radiation when the charge moves in a magnetically-anisotropic medium corresponds to a zero intensity in a medium that is anisotropic

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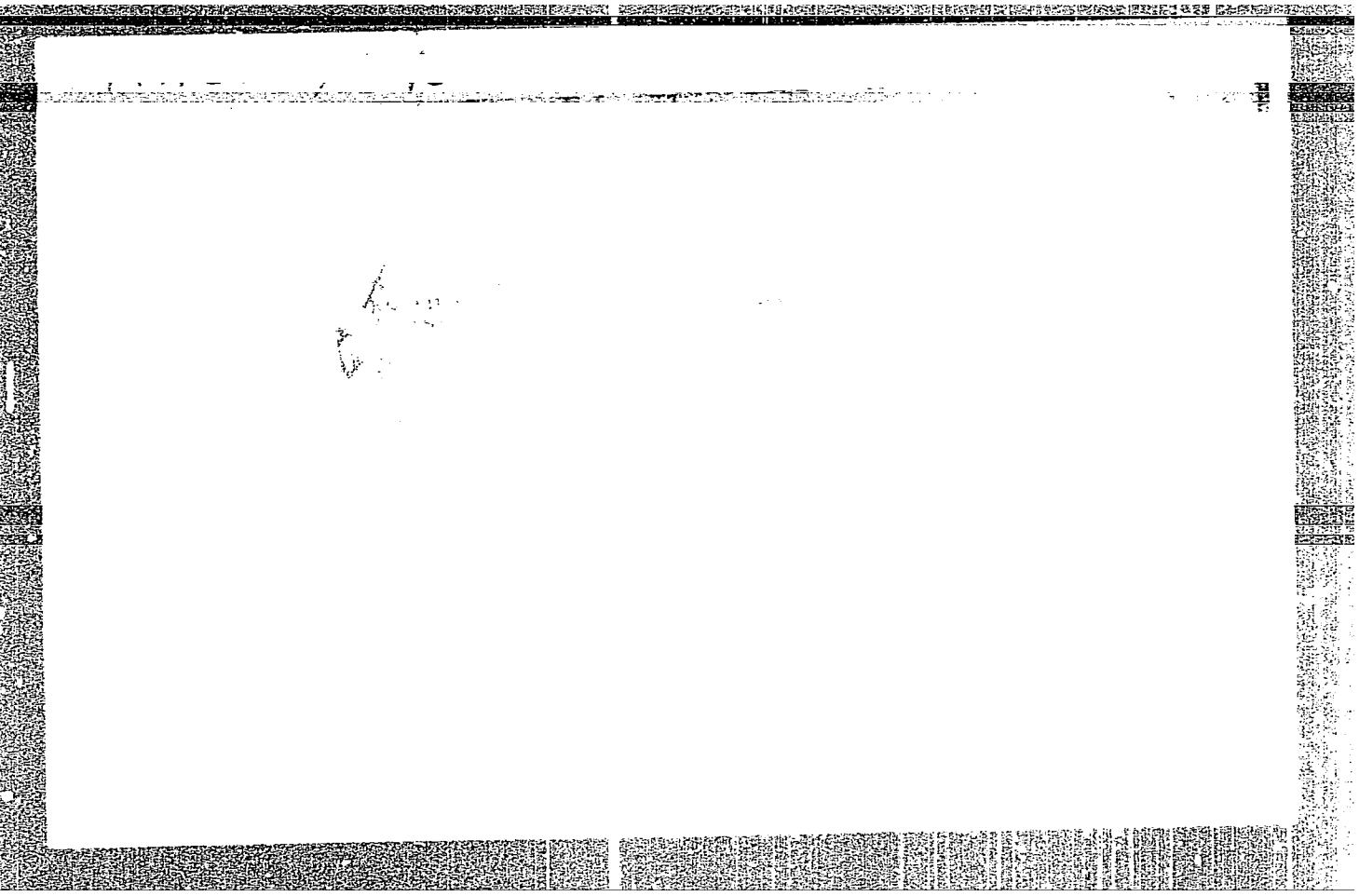
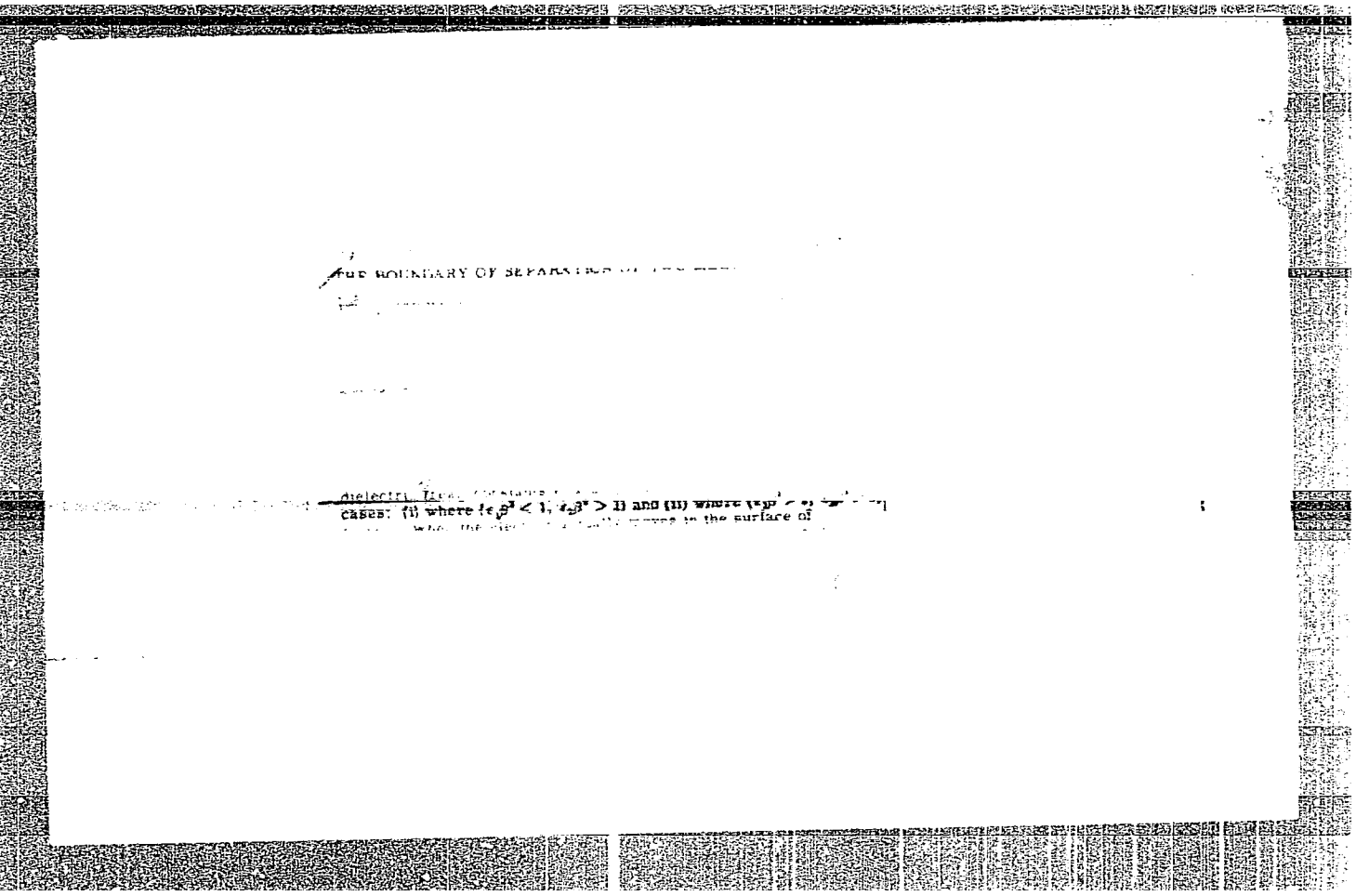


PAFOMOV, V.Ye.

Radiation of electrons in traversing a thin foil. Zhur. eksp. i teor. fiz. 33 no.4:1074-1075 O '57. (MIRA 11:1)

1. Fizicheskiy institut im. P.N. Lebedeva Akademii nauk SSSR.
(Electrons) (Cherenkov radiation)



PAFOMOV, V.Ye., kand. fiz.-mat. nauk.

Outstanding discoveries by Soviet physicists; on the awarding of Nobel prizes to P.A. Cherenkov, I.E. Tamm, I.M. Frank. Priroda 47 no.12:11-14 D '58. (MIRA 11:12)

1.Fizicheskiy institut imeni P.N. Lebedeva AN SSSR (Moskva).
(Cherenkov radiation)

AGRANOVICH, V.N.; PAFOMOV, V.Ye.; RUKHADZE, A.A.

Cherenkov radiation of an electron moving in a spatially dispersed medium [with summary in English]. Zhur.eksp. i teor.fiz. 36 no.1:238-243 Ja '59. (MIRA 12:2)

1. Fizicheskiy institut imeni P.N. Lebedeva AN SSSR.
(Cherenkov radiation) (Electrons)

PAFOMOV, V.Ye.

Cherenkov radiation in anisotropic ferrites. Zhur.eksp.i teor.fiz. 30 no.4:761-765 Ap '56. (MLRA 9:8)

1. Fizicheskiy institut imeni P.N. Lebedeva Akademii nauk SSSR.
(Cherenkov radiation) (Ferrite)

S/141/62/005/003/003/011
E032/E514

AUTHOR: Pafomov, V.Ye.

TITLE: Transit radiation at oblique incidence

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Radiofizika, v.5, no.3, 1962, 484-489

TEXT: This paper is concerned with the derivation of the rigorous solution of the problem of the emission of transit radiation at oblique incidence. The spherical wave of the transit emission and the angular energy distribution are obtained. The results may be used to compare the theory with the results of possible experiments on the emission of transit radiation at oblique incidence of a charged particle on a target and also in a detailed quantitative analysis of the spectrum and angular energy distribution of relativistic particles at glancing passage through a target. The Fourier components of the field were obtained by G. M. Garibyan (Ref.7: Izv. AN Arm.SSR, 11, No.4, 7, 1958) by direct mating of the electromagnetic field components at the separation boundary. However, this procedure is rather laborious but it turns out that the introduction of the Hertz vector gives

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Transit radiation at oblique incidence S/141/62/005/003/003/011
E032/E514

rise to a simplification. This is demonstrated in this paper, which is concerned with two adjacent media with different dielectric constants. Explicit expressions are given for the components of the Hertz vector and the angular distributions. These expressions can be easily specialised to cases such as the boundary between vacuum and a perfect conductor.

ASSOCIATION: Fizicheskiy institut imeni P. N. Lebedeva AN SSSR
(Physics Institute imeni P. N. Lebedev AS USSR)

SUBMITTED: October 14, 1961

Card 2/2

ACCESSION NR: AP4043627 S/0056/64/047/002/0530/0536

AUTHOR: Pafomov, V. Ye.

TITLE: Effect of multiple scattering on transition radiation

SOURCE: Zh. eksper. i teor. fiz., v. 47, no. 2, 1964, 530-536

TOPIC TAGS: transition radiation, bremsstrahlung, spectral energy distribution, radiation energy spectrum, particle interaction, coherent scattering

ABSTRACT: This supplements earlier work by the author on the same subject (DAN SSSR v. 133, 1315, 1960), with more careful attention paid to rigorous definition of the physical differences between transition radiation and bremsstrahlung. The results obtained give a quantitative description of the spectral density and the total energy of radiation connected with the presence of an interphase between media over and above the ordinary bremsstrahlung. An approx-

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ACCESSION NR: AP4043627

imate formula is given for the energy density of the transition radiation, valid if it is assumed that the electrons are not absorbed on the path of formation of the transition radiation and experience a large number of collisions with the atoms of the medium. The results are compared with bremsstrahlung in a condensed medium and it is shown that polarization of the medium leads to an increase in the intensity of the transition radiation and a decrease in the bremsstrahlung, owing to the decrease in the path of coherent interaction between the particle and the electromagnetic waves.

"The author is grateful to I. M. Frank for interest in the work and for useful discussions and to T. D. Kruglova for the computational work performed on the FIAN electronic computer." Orig. art. has: 1 figure and 20 formulas.

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

Card 2/3

ACCESSION NR: AP4043627

SUBMITTED: 08Jan63

ENCL: 00

SUB CODE: NP

NR REF SOV: 014

OTHER: 000

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30213
S/081/61/000/019/047/085
B110/B101

15.2600

AUTHOR: Pafomova, L. A.

TITLE: Thermodynamic study of sodium boro-silicate glasses

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 19, 1961, 309, abstract 19K253 (Sb. "Stekloobrazn. sostoyaniye". M.-L. AN SSSR, 1960, 507-510. Diskus., 522-524)

TEXT: A change in chemical structure is said to be the reason for abnormal changes of the physicochemical properties of leaching glasses after heat treatment. A temperature drop effects redistribution of Na_2O from SiO_2 to B_2O_3 in the direction to tetrahedrically coordinated B. The character of the polar structural elements forming and their relation to each other and to the nonpolar structural elements is, however, a function of the glass composition. The exfoliation established in these glasses is a consequence of the change in their chemical structure.
[Abstracter's note: Complete translation.]

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PAFOMOVA, L.A.

PHASE I BOOK EXPLOITATION SOV/5955

Vsesoyuznoye soveshchaniye po steklookhlazhdayushchim sostoyaniyu. 3d, Leningrad, 1959.

Steklookhlazhdayushchoye sostoyaniye; trudy Tretyego vsesoyuznogo soveshchaniya Leningrad, 16-20 noyabrya 1959 (Vitreous State; Transactions of the Third All-Union Conference on the Vitreous State, Held in Leningrad on November 16-20, 1959) Moscow, Izd-vo AN SSSR, 1960. 534 p. Errata slip inserted. 3,200 copies printed. (Series: Its: Trudy)

Sponsoring Agencies: Institut khimii silikatov Akademii nauk SSSR. Vsesoyuznoye khimicheskoye obshchestvo imeni D.I. Mendeleyeva and Gosudarstvennyy orden Lenina opticheskiy institut imeni S.I. Vavilova.

Editorial Board: A.I. Avgustinik, V.P. Barzakovskiy, M.A. Bezborodov, O.K. Botvinkin, V.V.Vargin, A.G. Vlasov, K.S. Yevstropyev, A.A. Lebedev, M.A. Matveyev, V.A. Molchanov, R.L. Myuller, Ye.A. Poray-Koshits, Chairman, N.A. Toropov, V.N. Florinskaya, A.K. Yakhkind; Ed. of Publishing House: I.V. Suvorov; Tech. Ed.: V.T. Bocharev.

PURPOSE: This book is intended for researchers in the science and technology of glasses.

COVERAGE: The book contains the reports and discussions of the Third All-Union Conference on the Vitreous State, held in Leningrad on November 16-19, 1959. They deal with the methods and results of studying the structure of glasses, the relation between the structure and properties of glasses, the nature of the chemical bond and glass structure, and the crystallochemistry of glass. Fused silica, mechanism of vitrification, optical properties and glass structure, and the electrical properties of glasses are also discussed. A number of the reports deal with the dependence of glass properties on composition, the tinting of glasses and radiation effects, and mechanical, technical, and chemical properties of glasses. Other papers treat glass semiconductors and soda borosilicate glasses. The Conference was attended by more than 300 delegates from Soviet and East German scientific organizations. Among the participants in the discussions were N.V. Solomin, Yu.A. Gastev, V.P. Prytulshikov, Yu. Ya. Gotlib, O.P. Mchedlov-Petrosyan, G.P. Mikhaylov, S.M. Petrov, A.N. Lazarev, D.I. Levin, A.V. Shatilov, M.T. Plochotnikiy, A.Ya. Kunetsov, E.V. Deryagina, Ya.A. Ryzganovskaya, A.A. Kaderov, M.M. Skornyakov, P.Ya. Rodin, E.K. Keller, Ya.A. Kunetsov, V.P. Pozdnev, R.S. Shevelevich, Z.G. Pinsker, and O.S. Kolchanova. The final session of the Conference was addressed by Professor I.I. Kitaygorodskiy, Honored Scientist and Engineer, Doctor of Technical Sciences. The following institutes were cited for their contribution to the development of glass science and technology: Gosudarstvennyy opticheskiy institut (State Optical Institute), Institut khimii silikatov AN SSSR (Institute of Silicate Chemistry, AS USSR), Fizicheskiy institut AN SSSR (Physics Institute AS USSR), Fiziko-tekhnicheskiy institut AN SSSR (Physicotechnical Institute AS USSR), Institut fiziki AN BSSR, Minsk (Institute of Physics, Academy of Sciences, Belorusskaya SSR, Minsk), Laboratory of Physical Chemistry of Silicates of the Institut obshchey i neorganicheskoy khimii AN BSSR, Minsk (Institute of General and Inorganic Chemistry, Academy of Sciences, Belorusskaya SSR, Minsk), Institut vysokomolekulyarnykh soyedineniy AN SSSR (Institute of High Molecular Compounds, AS USSR), Gosudarstvennyy institut steklyannoy promyshlennosti (State Institute for Glass), Gosudarstvennyy institut elektrotekhnicheskogo stekla (State Institute for Electrical Glass), Sibirskiy fiziko-tekhnicheskiy institut, Tomsk (Siberian Physicotechnical Institute, Tomsk), Leningradskiy gosudarstvennyy universitet (Leningrad State University), Leningradskiy khimiko-tekhnologicheskiy institut (Moscow Institute of Chemical Technology), Leningradskiy khimiko-tekhnologicheskiy institut im. Lensoveta (Leningrad Technological Institute imeni Lensovet), Belorusskiy politekhnicheskiy institut (Belorussian Polytechnic Institute, Minsk), Novocherkasskiy politekhnicheskiy institut (Novocherkask Polytechnic Institute), and Sverdlovskiy politekhnicheskiy institut (Sverdlovsk Polytechnic Institute). The Conference was sponsored by the Institute of Silicate Chemistry AS USSR (Acting Director - A.S. Gollib), the Vsesoyuznoye Khimicheskoye Obshchestvo im. D.I. Mendeleyeva (All-Union Chemical Society imeni D.I. Mendeleyev), and the Gosudarstvennyy orden Lenina opticheskiy institut imeni S.I. Vavilova (State "Order of Lenin" Optical Institute).

S.I. Vavilova (State "Order of Lenin" Optical Institute).
The 15 resolutions of the Conference include recommendations to organize a Center for the purpose of coordinating the research on glass, to publish a new periodical under the title "Fizika i khimiya stekla" (Physics and Chemistry of Glass), and to join the International Committee on Glass. The Conference thanks A.A. Lebedev, Academician, Professor, and Honored Scientist, Member of the Obshchestvo im. D.I. Mendeleyeva, Doctor of Physics and Mathematics, Member of the Gosudarstvennyy orden Lenina opticheskiy institut imeni S.I. Vavilova), and the Organizational Committee and B.L. Myuller, Doctor of Chemical Sciences, Member of the Organizational Committee. The editorial board thanks S.M. Ryaterey, M.V. Volkenshteyn, L.I. Demkina, D.P. Belychin, S.K. Dubrova, V.A. Ioffe, and B.T. Kolomiyets. References accompany individual reports.

KRYZHANOVSKIY, B.P.; KUZNETSOV, A.Ya.; PAFOMOVA, L.A.

Reflection from semiconducting films of silicon monoxide, containing silver and gold, in the long-wave spectral region. Opt. i spektr. 15 no.6:824-826 D '63.
(MIRA 17:1)

KUZNETSOV, A.Ya.; PAFOMOVA, L.A.

Films of semiconducting ZrO_2. Fiz. tver. tela 2 no.10:2567-2569 '60. (MIRA 13:12)
(Zirconium oxide--Electric properties)

S/0051/63/015/006/0824/0826

ACCESSION NR: AP4009471

AUTHOR: Kry*zhanovskiy, B.P.; Kuznetsov, A.Ya.; Pafomova, L.A.

TITLE: Reflection of semiconductor layers of silicon monoxide doped with silver and gold in the long wavelength region of the spectrum

SOURCE: Optika i spektroskopiya, v.15, no.6, 1963, 824-826

TOPIC TAGS: heat filter, infrared mirror, infrared reflection, silicon monoxide coating, silver doped silicon monoxide, gold doped silicon monoxide, semiconductor coating

ABSTRACT: Thin coatings on the surface of glass and other materials characterized by selective reflection in the infrared are attracting the attention of investigators. A number of metal oxide coatings have been investigated and found to be characterized by a high reflection coefficient in the infrared region. In view of the possible utility of such coatings for heat shielding purposes it was deemed of interest to investigate the reflection of semiconductor layers of silicon monoxide doped with silver and gold, prepared by simultaneous vacuum evaporation of the substances. The fact that SiO (Ag,Au) layers can be deposited at relatively low tem-

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peratures makes it possible to use not only glass but also lucite and similar plastics as the substrate. Such layers are semitransparent in the visible part of the spectrum and have a surface conductivity of from 10^{-1} to 10^{-2} ohm^{-1}. Experiments showed that, while transparent in the visible region, semiconductor SiO (Ag,Au) coatings on lucite have a high reflection coefficient in the infrared region. The reflection coefficient monotonically increases from 0.3 to 4 μ and then levels off in the 4 to 14 μ region. As in the case of semiconductor layers of SnO_2 and In_2O_3 the reflection coefficient depends on the electric conductivity: it increases with increasing conductivity. The conductivity of the investigated SiO (Ag,Au) layers was varied by heating at 150-170°. The transmission and reflection curves obtained for some SiO layers are shown in Fig.1 of the Enclosure. There is some similarity between the electro-optical properties of SiO (Ag,Au) layers deposited on undercoatings of antimony, lead, bismuth and other metal oxides with the properties of gold and silver coatings as reported in the literature. The results of the present experiments indicate that semiconductor coatings of silicon monoxide doped with silver or gold can be used as heat shielding filters and infrared mirrors when deposited on glass or plastic substates. Orig.art.has: 2 figures.

KUZNETSOV, A.Ya.; PAFOMOVA, L.A.; KALININA, L.M.

Heating elements from ceramic semiconductors. Zav. lab. 23 no.12: 1497-1498 '57. (MIRA 11:2)

(Semiconductors) (Ceramics)

PAFOMOVA, L.A.

AUTHORS: Kuznetsov, A.Ya., Pafomova, L.A., Kalinina, L.M. 32-12-40/71

TITLE: Ceramic Semiconductor Heaters (Keramicheskiye poluprovodnikovyye nagrevateli).

PERIODICAL: Zavodskaya Laboratoriya, 1957, Vol. 23, Nr 12, pp. 1497-1498 (USSR)

ABSTRACT: As ceramic semiconductors produced from lead dioxide possess high electric conductivity, an investigation was carried out with a view of finding out what influence is exercised by admixtures to this material of various semiconductive oxides and some of their compounds with respect to conductivity properties. The highest degree of electric conductivity at room temperature was found to exist in the composition containing 96% SnO_2, 2% CuO and 2% Sb_2O_3. Such a mixture was pulverized in a porcelain grinding machine and put through a sieve. The lead dioxide was previously heated red hot at 1100-1200°, whereas the copper oxide was used in form of fine crystalline powder. This mixture of powder was kneaded together by the admixture of 5% of water to a pulp and formed into a briquette. The latter is dried for 2 hours at a temperature of 130°, after which it is quickly heated up to a temperature of 1000°, and heated red hot at a slowly rising temperature (50° per hour) up to 1450°. Cooling was carried

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Ceramic Semiconductor Heaters 32-12-40/71

out together with the furnace while the current was switched off. The ceramic semiconductors thus obtained have high electron conductivity. It was found that the addition of copper oxide and antimony oxide to the lead oxide diminishes its resistance but, at the same time, increases its heat conductivity. Such heaters, which are produced on the basis of lead oxide, can be used at temperatures of 1200° - 1300° (at short intervals of application of up to 1500°). There is 1 figure and 1 Slavic reference.

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Card 2/2 1. Semiconductors-Heaters 2. Ceramics

S/181/60/002/010/034/051
B019/B056

9,4300 (1137, 1138, 1143)
26.2421

AUTHORS: Kuznetsov, A. Ya. and Pafomova, L. A.

TITLE: Films of Semiconducting ZrO_2

PERIODICAL: Fizika tverdogo tela, 1960, Vol. 2, No. 10, pp. 2567 - 2569

TEXT: In the introduction the semiconductor properties of ZrO_2 above 1000°C, its high chemical stability and its refractoriness are pointed out. Experiments made by the authors showed that transparent films of ZrO_2 may be produced either by the treatment of parts with zirconium salt vapors or by hydrolysis. In this way it is possible to obtain layers having a thickness of from 500 to 3000 A and a light transmissivity of 95% on various materials within the visible and ultraviolet range. The surface layers are firm and have a high surface resistivity. The authors tried to increase the electric conductivity of the layers by introducing impurities. This could be done by the introduction of Sn- and Bi-atoms into the ZrO_2 layer. For this purpose, the layers were

Card 1/2

PAFOMOVA - L.A

MIT

Thermochemical investigation of the reaction of sodium borosilicate glass with hydrochloric acid. O. S. Molchanova and L. A. Pafomova. *Trudy Onkhesk. Inst. im. Vavilova*, 23, No. 141, 13-18(1953); *Referat. Zhur., Khim.* 1954, No. 47013.—To study the reaction between 3*N* HCl and Na_2O-B_2O_3-SiO_2 glass, 5 glasses were used contg. SiO_2 60 and Na_2O 10, 12, 14, 16, and 20 mole % annealed at around 500-70)°. In glasses contg. more than 12% Na_2O the changes in the magnitude of the thermal effect of the reaction and d were in opposite directions and the relative rate of reaction of these glasses with acid and the amt. of substance going into soln. were practically const. In glasses with 12 and 10% Na_2O the changes in the thermal effect of the reaction and d. in the interval of 530-700° were in the same direction while the relative rate of reaction between glasses and acid and amt. of substance dissolved changed, reaching a max. in specimens annealed at 530-50°. The anomalous changes in phys. and chem. properties occurring in these glasses on heating at 500-700° in connection with occurring chem processes are pointed out.

M. Hosch

(1)

PAGAC, Ivan, inz.

Problems of bitumen accumulation in the Pannonian of the Danube Basin. Geol pruzkum 5 no.12:375-376 D '63.

1. Ceskoslovenske naftove doly, N.P., Hodonin.

PAGAC, Ivan, inz.

New trends and prospects of prospecting for petroleum in the Danubian Basin. Geol pruzkum 5 no.10:297-299 O '63.

1. Ceskoslovenske naftove doly, n.p., Hodonin.

PAGAC, Ivan, inz.

Prospect of finding bitumen in the Mesozoic underlying the Neogene in the Danubian Basin. Geol pruzkum 6 no.12:358-359 D '64.

1. Ceskoslovenske naftove doly National Enterprise, Hodonin.

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A121/A126

I.1110

AUTHOR: Pagáč, K.

TITLE: PAK 2 anode-mechanical electric spark erosion saw

PERIODICAL: Strojírenská výroba, no. 4, 1961, 181

TEXT: The electroerosion machining is used in case of hard and tenacious materials. The PAK 2 equipment is designed for the division of materials up to 6 mm in diameter (in special cases up to 10 mm) by means of a steel disk and operates on the anode-mechanical principle with automatic feed. To the machine frame, the spindle with the cutting disk of 140 mm diameter is attached; the thickness is 0.1 + 0.4 mm depending on the type of machining, and the speed is 10 m/sec. The material is chucked to the vise on the movable support and is automatically forwarded by means of an electrodynamic traction system. A sufficient quantity of working liquid (electrolyte) is supplied to the cutting spot by means of a pump; a watery solution of sodium silicate (Na_2SiO_2) with an addition of about 15 % monoethylene glycol is used. The electrical part consists of a d-c source with a panel; the machining stages are: 1st step 2 amp operating current; 2nd step 3.5 amp operating current; 3rd step 6 amp operating current,

Card 1/2

PAGAC, Karol

PA-30 anode mechanical saw for small sections. Stroj vyr 10 no.4:210 Ap '62.

1. Vyvojovy ustav pre mechanizaciu a automatizaciu, Nove Mesto nad Vahom.

PAGAC, Mojmir

Forestry in Mexico. Les cas 9 no.3:261-262 Mr '63.

1. Vyzkumny ustav lesniho hospodarstvi a myslivosti, Abraslav-Strnady.

PAGAC, PAVEL

Vyvin trav v cistych kulturach a miesankach; prispevok k agrobiologickemu hodnoteniu knokurencnej schopnosti niektorych kulturnych druhov trav. Bratislava, Vydavetelstvo Slovenskej akademie vied, 1957. 156 p. (The development of grasses in pure and mixed cultures; a contribution to the agrobiologic evaluation of the durability of some cultured grass types. German and Russian summaries. illus., bibl., footnotes, graphs, tables)

SO: Montly Index of East European Accession (EEAI) LC, Vol. 7, No. 5, May 1958

PAGAC. R.

The problem of the KD-35 tractor. p. 227 (Mechanisace Zemedelství, Vol. 7, No. 10, May 1957, Praha, Czechoslovakia)

SO: Monthly List of East European Accessions (EEAL) LC, Vol. 6, No. 8, Aug 1957, Uncl.

PAGAC, R.

"How to improve transportation of Hungarian SZJS 1, 8 silage combine harvesters."

MECHANISACE ZEMEDELSTVI, Praha, Czechoslovakia, Vol. 9, No. 7, July 1959.

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Unclassified.

PAGAC, R.

PAGAC, R. Organization of machinery repairing in the machine-tractor stations not having general repairs. p. 66.

Vol. 7, no. 3, Feb. 1957
MACHANISACE ZEMEDELSTVI
AGRICULTURE
Czechoslovakia

So: East European Accession, Vol. 6, No. 5, May 1957

PAGAC, Richard, inz.

Trends of technical development and effectiveness of the building industry mechanization. Inz stavby 12 no. 3:Supplement: Mechanizace no. 3:33-34 '64.

1. Institute of Building Industry Economy and Organization, Bratislava.

PAGAC, Richard, inz.

Some problems of the effectiveness of the investment in purchasing new machines. Inz stavby 11 no.2: Suppl: Mechanizace no.2:26-29 '63.

1: Vyvojove pracovisko pre investicny rozvoj, Bratislava.

SOKOLA, K.; ROTREKL, B.; PAGACOVA, L.; EXNER, J.

Study on the adsorption of fatty acids on the surface of rutile.
Chem prum 14 no.11:597-599 N '64.

1. Research Institute of Synthetic Resins and Lacquers, Pardubice.

PAGACZEWSKI, I.

Instead of a review. Postepy astronom 13 no.2:139-144 '65.

PAGACZEWSKI, J.

Explosion of a star. Wszechswiat no.12:293 D'63.

PAGACZEWSKI, J.

Movements of the earth's pole. Wszechswiat no.11:267 N'63.

PAGACZEWSKI, J.

Localization of Nicholas Copernicus' astronomical observatories in Frombork based on a 16th century document. Postepy astronom 12 no. 2:128 '64.

PAGACZEWSKI, J.

The new American geophysical observatory in Arecibo. Wszechswiat no.11:249-250 N '64.

How did Nicolaus Copernicus spell his name? Ibid:251-252.

PAGACZEWSKI, Janusz, dr

The shock which caused damages in Wieliczka in 1591. Biul obserwat Krakow no.1:98-100 '64.

1. Institute of Geophysics of the Polish Academy of Sciences, Warsaw.

PAGACZEWSKI, J.

S/035/62/000/012/005/064
A001/A101

AUTHOR: None given

TITLE: "Urania" (Poland), 1962, v. 33, no. 7

PERIODICAL: Referativnyy zhurnal, Astronomiya i Geodeziya, no. 12, 1962, 6, abstract 12A34 ("Urania" (Polska), 1962, v. 33, no. 7, 194 - 220, Polish)

TEXT: The following articles have been published: "Electrical Universe" by K. Ziolkowski; "Space Medicine" by B. Falkiewicz; "The name of Copernicus in botanics" by B. Gomółka; "Eternal satellite" by J. Gadomski; "Voicech from Brudzew", "Copernicus portrait on the clock of the Strassburg cathedral" and "Kant on Copernicus" by S. Brzostkiewicz; "Discovery of Transpluto" by S. Lubertowicz; "Correction to the article on Comets" by F. Kępinski; "On the problem of restoration of Frombork" by S. Przyłęcki; "470 anniversary of the first terrestrial globe" by J. Pagaczewski, etc.

N. Ch.

[Abstracter's note: Complete translation]

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PAGACZEWSKI, J. How was Neptune Discovered? Urania, 1946, v. 18, p. 18-20.

PAGACZEWSKI, J.

PAGACZEWSKI, J. Visual Total Brightness of the Comets. Warszawa. Uniwersytet-Obserwatorjum. Okolnik, 1946, no. 22, p. 7-8.

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PAGACZEWSKI, J. Aurora observed in Cracow. Urania, 1949, v. 20, p. 46.

PAGACZEWSKI, J.

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PAGACZEWSKI, J. TY Capricorni, AB Cassiopeae, RW Ceti. The Light Elements of the Variable Star RW Comae. New Light-Elements of Eclipsing Binary EP Monocerotis. XY Puppis. Warszawa. Uniwersytet-Obserwatorjum. Okolnik. 1949, no. 24, p. 1-4.

PAGACZEWSKI, J.

PAGACZEWSKI, J. The Minima of Eclipsing Variables. Warszawa. Uniwersytet-Obserwatrojum. Okolnik, 1945, no. 22, p. 5-7

PAGACZEWSKI, J.

New seismologic stations in Poland. Wszechswiat no.11:279-280 N'61.

Silesian geophysical station of the Polish Academy of Sciences in Raciborz. 280-281

PAGANELSKI, J.

Copernicus and names of ships. Wszechswiat no.1:17-18 '56.

Copernicus; scenes from the Renaissance. Ibid.: 18

PAGACZEWSKI, Janusz, dr.

Doctor Nicolau's observatory in Frombork. Problemy 20 no.8: 477-484 '64

[redacted], Janusz

Opening of the newly constructed U. Copernicus Astronomical Observatory of the Jagiellonian University at Fort Skala in Krakow. Wszechswiat no. [redacted] Ag'54

PAGACZEWSKI, Janusz (Krakow)

Maurycy Pius Rudzki (1862-1916). Wszechswiat no.5:116-118 My '63.

L 10366-63 EWT(1)/EDS--AFFTC/ESD-3--TF

ACCESSION NR: AP3002521 P/0026/63/011/01-/0115/0118

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AUTHOR: Pagaczewski, Janusz

TITLE: The seismological station of the Polish Academy of Sciences in Niedzica (Pieniny).

SOURCE: Acta geophysica polonica, v. 11, no. 1-2, 1963, 115-118

TOPIC TAGS: seismology, seismological station, geophysics

ABSTRACT: A seismic station affiliated with the Observatorium Geofizychnego PAN (Geophysical Observatory PAN) in Krakow, was set up early in 1960 in the Carpathian Mountains at the Zamek Gorny Castle in Niedzica (longitude 20°19'19" E; latitude 49°25'25" N; h = 555 m above sea level). The station is equipped with three SK-58 short-period seismographs with the constants given in Table 1 of Enclosure. Other equipment includes a compensating astronomical clock, a Testa-Lambda radio, a voltage regulator, mirror galvanometers, and a spring-operated recorder employing a light-sensitive paper tape (25 x 92 cm)

Card 1/2

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for each of the three seismographs. The tapes are changed every 24 hr when the time signal is received from Tashkent at 1900 hours GMT. The tapes are normally developed at Niedzica and forwarded every ten days to the Geophysical Observatory in Krakow for processing. The processed results are then forwarded at monthly intervals to the Zaklad Geofizyki PAN (Institute of Geophysics PAN) in Warsaw. A Seismic Bulletin is published regularly. Orig. art. has: 3 figures and 1 table.

ASSOCIATION: Zaklad Geofizyki PAN (Institute of Geophysics PAN)

SUBMITTED: 09Aug63 DATE ACQ: 16Jul63 ENCL: 01

SUB CODE: 00 NO REF SOV: 000 OTHER: 000

Card 2/2

PAGACZEWSKI, J.

The distance to Nebula of Andromeda (M 31) has been revised.
Wszechswiat no.10:242 O '63.

PAGACZEWSKI, Janusz

Localization of the Copernicus Observatory in Frombork based on a document from the 16th century. Kwart hist nauki i tech 9 no. 1: 3-10 '64.

PAGACZEWSKI, Janusz (Krakow)

The Nicholas Copernicus Astronomical Observatory in Frombork.
Wszechswiat no.10:234-239 O '63.

PAGACZEWSKI, Janusz, dr; CZECHOWICZ, M., mgr inz.; OLCZAK, Tadeusz, prof. dr

The Seismological Station in Krakow, 1903-1955. Biul obserwat Krakow no.1:5-26 '64.

Observations of the Seismological Station in Krakow (Wawel) in 1955 and 1956. Ibid.:27-60

1. Institute of Geophysics of the Polish Academy of Sciences, Warsaw (for Pagaczewski and Olczak). 2. Department of the Lithosphere of the University, Warsaw (for Olczak).

PAGACZEWSKI, Janusz (Krakow)

Giacobinids (Draconids). Urania 32 no.10:299-305 O '61.

(Meteors)

PAGACZEWSKI, Janusz (Krakow)

The Leonids. Urania 32 no.11:330-336 N '61.

(Moon)

PAGACZEWSKI, Janusz (Krakow)

The Ursids; the Becvar Shower. Urania 32 no.12:362-365 D '61.

(Meteors)

PAGACZEWSKI, Janusz (Krakow)

The Quadrantids. Urania 33 no.1:7-11 Ja '62.

(Meteors)

PAGACZEWSKI, Janusz

Seismologic Station of the Polish Academy of Sciences in Niedzica in the Pieniny Mountains. Acta geophys Pol 11 no. 1/2: 115-118 '63.

1. Zaklad Geofizyki, Polska Akademia Nauk, Warszawa.

PAGACZEWSKI, S.

PAGACZEWSKI, S. Encounter with the professor; a biographic sketch. p. 11.

Vol. 28, no. 1, Jan. 1956
TURYSTA
Poland

So: East European Accession, Vol. 6, No. 5, May 1957

PAGACZEWSKI, S.

In the Poprad Valley. p. 15; TURYSTA. (Polskie Towarzystwo Turystyczno-Krajoznawcze) Warszawa; No. 5, May 1955.

SOURCE: East European Accessions List (EEAL), Library of Congress, Vol. 4, No. 12, December 1955.

PAGACZEWSKI, S.

Vacations of the elegant lady.

p. 7 (Turysta) No. 15, Aug. 1957, Warszawa, Poland

SO: MONTHLY INDEX OF EAST EUROPEAN ACCESSIONS (EEAI) LC, VOL. 7, NO. 1, JAN. 1958

PAGACZEWSKI, S.

Gorce Mountains with the aroma of hay. p. 17.
No. 6, June 1955. TURYSTA. Warszawa, Poland.

So: Eastern European Accession. Vol 5, no. 4, April 1956

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Zbiegiem Dunajca. Opracowanie illustracyjne Kazimierz Daysse-Tobiczyk. Warszawa, Sport i Turystyka, 1954. 133 p. (Along the course of the Dunajec River. illus.)
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Przez Mogliany i Obidowa do Zakopanego.
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(Through Mogilany and Obidowa to Zakopane. 2d ed. illus., maps, bibl.)

SO: Monthly List of East European Accessions (EEAL) LC, Vol. 6, no. 6, June 1957, Uncl.

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So: Eastern European Accession. Vol 5, no. 4, April 1956

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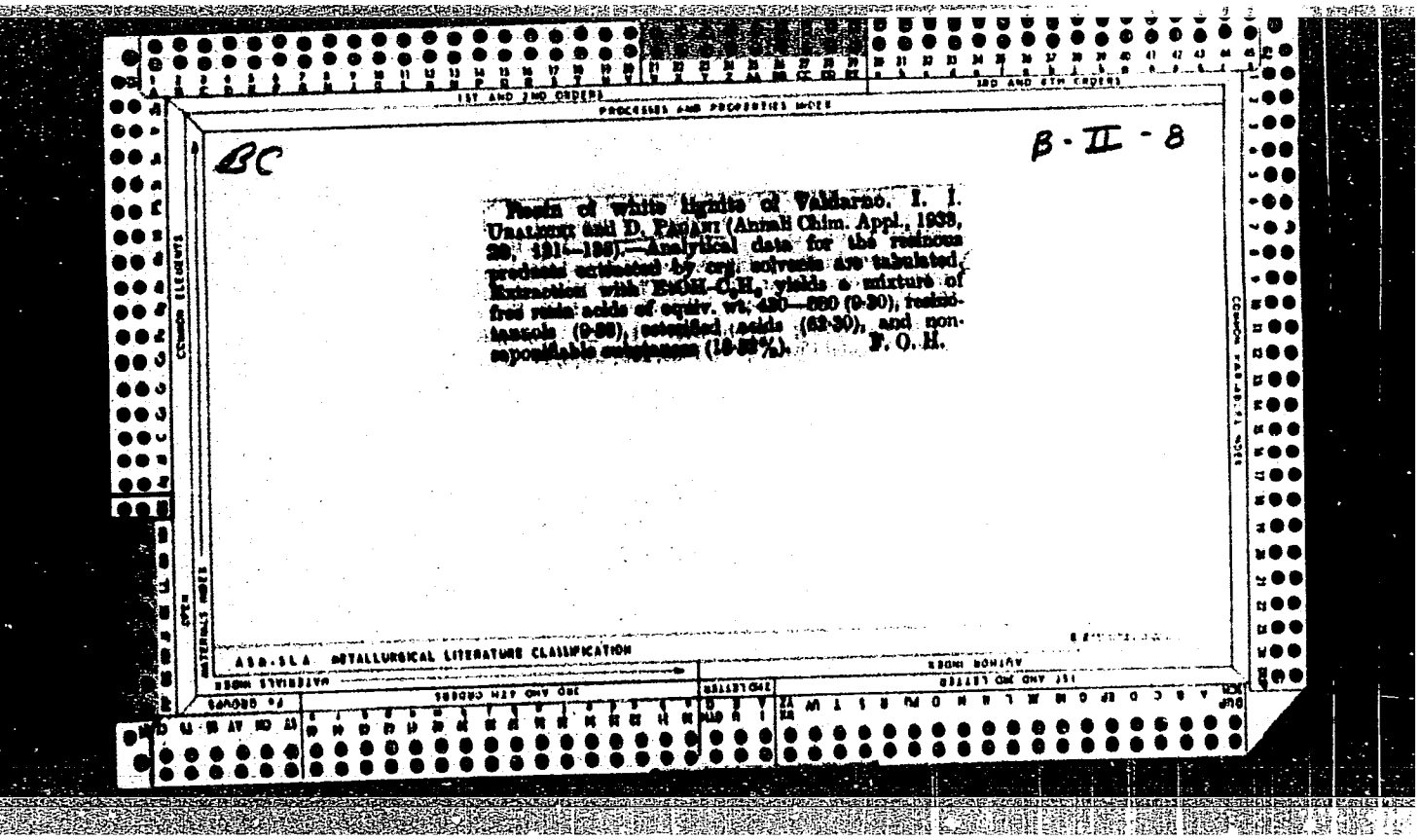
Causes of the nonrhythmic work of meat combines. Mias.ind. SSSR 34 no.3:38-39 '63. (MIRA 16:7)

1. Borovichskiy myasokombinat.



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B-II-8

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SO: Manufacturing and Mechanical Engineering in the Soviet Union, Library of Congress, 1953

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1. Institut pochvovedeniya, Tashkent.

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[The party organization in the struggle to increase flax production; the practices of a district party organization] Partarganizatsyia u barats'be za uzdum il'navodstva; z vopytu raboty raennoi partyinai arganizatsyi. Minsk, Dziarzh. vyd-va BSSR, 1955. 67 p. (MLRA 10:1)

1. Sakratar Talachynskaga PK KPB (for Pagarski)
(Flax) (Communist Party of the Soviet Union--Party work)

Name: PAGAV, Irakliy Karamanovich

Dissertation: Changes in the Central Nervous System during Dystrophic States

Degree: Doc Med Sci

Affiliation: [not indicated]

Defense Date, Place: 27 May 54, Council of Tbilisi State Med Inst

Certification Date: 28 Apr 56

Source: BMVO 4/57

IOSELIANI, G.D.; PAGAVA, G.D.; KHUCHUA, A.V.

Importance of coronary perfusion in exclusion of the heart from blood circulation; hypothermia and artificial blood circulation. Trudy Inst. eksp. i klin. khir. i gemat. AN Gruz. SSR 11:325-330 '63. (MIRA 17:8)

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Some current problems of perfusion in an artificial blood circulation. Soob. AN Gruz. SSR 31 no. 3:727-728 S '63. (MIRA 17:7)

1. Akademiya nauk GruzSSR (for Eristavi).