"APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R000101630007-3

ANKUDINOV, A. M.

ANKUDINOV, A. M. "Drying-up of Pinus Cro s of Old plowland"

Lesnoe Khozyaistvo, vol. 3, no. 9 1950, pp. 46-49. 99.8 L5622

SO: SIRA, SI 90-53, 15 Dec. 1953

APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R000101630007-3"

"APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R000101630007-3

ANKUDINOV, A.M.

ANKUDINOV (A. M.). Причины отпада сеянцев в лесопитомниках и меры борьбы с ними. [Reasons for the decay of seedlings in forest nurseries and control measures against it.] Лесное Хозяйство [*Forest Husbandry*], 20, 5, pp. 26–30, 3 figs., 1950.

In studies on seedling diseases at the Pan-Soviet Scientific Research Institute of Forest Husbandry several soil fungi of the genus *Fusarium* and a few of *Alternaria* were found to be responsible, in addition to other factors, for the heavy losses of pine seedlings in 1949, in spite of the great drought in the first part of the growth period when these fungi are not normally active. *Fusarium* seedling wilt was most severe in Tatarian maple [*Acer tataricum*] and acute-leaved maples [*A.* sp.], less so in elms, *Amorpha*, and mulberry, while only single attacks developed in ash and Siberian yellow acacia. Attempts at control with formalin were unsuccessful.

APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R000101630007-3"

"APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R000101630007-3

[illegible], A. [M.]

"The [illegible] of young plants in nurseries and the [illegible] to eliminate [illegible]. Tr. [illegible]." [illegible]. 1[illegible].
([illegible] Sumar. Vol. 5, No. [illegible]/5, Apr./[illegible] 1951, Sarajevo.)

SO: Monthly List of East European Accessions, Vol. [illegible], No. [illegible], Library of Congress, September 1953, Uncl.

APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R000101630007-3"

"APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R000101630007-3

VANIN, Stepan Ivanovich, professor, 1890-1951; SOKOLOVA, D.V., redaktor; DRONZHEVSKIY, V.M., redaktor; ARNOL'DOVA, K.S., redaktor; ANKUDINOV, A.M., retsenzent; VORONTSOV, A.I., retsenzent; KARABIK, N.P., tekhnicheskiy redaktor.

[Forest phytopathology]Lesnaia fitopatologiia.Izd. 4-e, posmertnoe (perer. i dop.). Pod obshchei red. D.V.Sokolova Moskva, Goslesbumizdat, 1955. 416 p.
(Botany--Pathology) (MIRA 8:4)

APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R000101630007-3"

"APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R000101630007-3

SOKOLOVSKIY, V.I.; GASHUKOV, V.S.; ANKUDINOV, D.T.

Investigating the power used by electric motors in dragging. Trudy Ural.politekh.inst. no.104:174-180 '61. (MIRA 14:6)
(Electric motors—Testing) (Excavation)

APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R000101630007-3"

"APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R000101630007-3

S/183/60/000/02/06/025
B004/B005

AUTHOR: Ankudinov, I. A., Director

TITLE: Report

PERIODICAL: Khimicheskiye volokna, 1960, No. 2, pp. 16 - 17

TEXT: This report was delivered at the Branch Conference of the Synthetic Fiber Industry in Klin, December 16-18, 1959. The lecturer's factory is still using spinning frames of 1927-1931, and the staple fiber equipment of 1931-1934. [illegible] part of it has since been modernized. Measures to increase the breaking length of fiber to 21-22 km have been realized. But the quality of raw materials and the varying equipment prevent a uniform quality. The Fabrika im. Anisimova (Factory imeni Anisimov) demands staple fiber with a breaking length of 21-2[illegible] according to TU (Technical Specifications), a breaking length of only 17 km [illegible] prescribed. Cellulose of the Svetogorskiy kombinat (Svetogorsk Kombinat) cont[illegible] up to 0.5[illegible] of resins and fats. TiO_2 shows a varying quality. To improve the [illegible]oductio[illegible] the quality of all raw materials delivered (Cellulose, NaOH, H_2SO_4, [illegible]) must be improved. The lecturer's factory immediately requires 15 windin[illegible]

Card 1/2

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"APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R000101630007-3

S/183/60/000/00[illegible]
B004/B005

frames of the type PKS-2, and later on another 22 to replace the old equipment. The VNIIV (All-Union Scientific Research Institute of Synthetic Fibers) is to develop modifiers. The Gosplan SSSR (State Planning Committee of the Council of Ministers of the USSR) is to ensure the supply of spare parts, especially of spinning pumps. The lecturer's factory and the Mogilevskiy zavod (Mogilev Works) were formerly supplied with spare parts (e.g. press carriages) by the zavod "X let oktyabrya" ("10 Years of October" Works). Now they are not available anywhere. Spare parts for winding frames were formerly delivered by the Selivanovskiy zavod (Selivanovskaya Works), Kostromskiy zavod (Kostroma Works), and Kiyevskiy zavod (Kiyev Experimental Workshops). Now orders are not accepted by these factories. The Kamenskiy zavod (Kamenka Works) does not execute orders for spinning pumps of the type NSh-12. An exchange of experience of chief engineers and technical department chiefs of synthetic fiber factories should be carried out at least twice a year. Active cooperation is demanded of the VNIIV, the Upravleniye Khimicheskikh volokon Goskomiteta Soveta Ministrov SSSR po khimii (Administration for Chemical Fibers of the State Committee on Chemistry of the Council of Ministers USSR), the Gosplan (State Planning Committee), the Upravleniye Khimicheskoy promyshlennosti (Administration of the Chemical Industry), and the [illegible]oz (Leningrad sovnarkhoz).

[illegible]: Leningradskiy zavod (Leningrad Works)

Card 2/[illegible]

APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R000101630007-3"

"APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R000101630007-3

ANKUDINOV, I.V.,

Increasing the productivity of the S-251 mortar pump. Rats. i izobr. predl. v stroi. no.86:8 '54. (MLRA 8:8)
(Plastering) (Pumping machinery)

APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R000101630007-3"

"APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R000101630007-3

ANKUDINOV, L.

New open-hearth furnaces in Magnitka. Na stroi. Ros. no.10:11-13 O '61. (MIRA 14:11)

1. Upravlyayushchiy ordena Lenina trestom Magnitostroy.
(Magnitka--Open-hearth furnaces)

APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R000101630007-3"

"APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R000101630007-3

ANKUDINOV, L.; PRUDAYEV, P.

Construction of industrial enterprise [illegible] specialized [illegible] ons. Na stroi. Ros. 3 no.2:2-4 [illegible] :2)

1. Upravlyayushchiy ordena [illegible] ov).
2. Nachal'nik planovogo otd. [illegible]
(Industrial plant [illegible] ntry

APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R000101630007-3"

"APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R000101630007-3

ANKUDINOV, N.V.

Metallurgical value of briquets from cast iron shavings. Lit. proizv. no.8:9-11 Ag '64. (MIRA 18:10)

APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R000101630007-3"

"APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R000101630007-3

VOLOBUYEV, V.I.; ANKUDINOV, N.V.; GONCHARENKO, A.M.

Making AOKh-type chromium steel using briquets made of ShKh-15 steel chips. Biul. tekh.-ekon. inform. Gos. nauch.-issl. inst. nauch. i tekh. inform. 18 no.7:3-4 Jl '65. (MIRA 18:9)

APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R000101630007-3"

"APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R000101630007-3

ANKUDINOV, N.V.; SHIPULIN, A.T.

Using briquetted cast iron chips. Lit.proizv. no.11:35-37 N '62. (MIRA 15:12)

(Scrap metals)

APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R000101630007-3"

"APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R000101630007-3

ANKUDINOV, S. I.

PA 19T37

USSR/Telephone Lines - Maintenance and Repair Jan 1946

Poles

"Planning Repairs," S. I. Ankudinov, ½ p

"Vestnik Svyazi - Elektro Svyaz'" No 1 (70)

Greater care must taken in setting up new poles, to reduce the number of replacements. Recommends advance reconnoitering of equipment to determine the number of new parts necessary, in this case the number of new poles required.

19T37

APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R000101630007-3"

"APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R000101630007-3

SILANT'YEV, Ye.I.; ANKUDINOV, V.A.; KOLESOV, S.G.

Immunity to anthrax induced by the action of ionizing radiation on the organism. Radiobiologiia 1 no.4:580-582 '61. (MIRA 17:2)

1. Tsentral'nyy institut usovershenstvovaniya vrachey i Nauchno-kontrol'nyy institut veterinarnykh preparatov, Moskva.

APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R000101630007-3"

"APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R000101630007-3

ANKUDINOV, V.A.

Method of lateral tomography. Vest. rent. i rad. no.5:73-76 S-O '54. (MLRA 7:12)

1. Iz rentgenodiagnosticheskogo otdeleniya (zav. prof. I.A.Shekhter) TSentral'nogo nauchno-issledovatel'skogo instituta rentgenologii i radiologii imeni V.M.Molotova (dir. prof. P.D.Yal'tsev)
(ROENTGENOGRAPHY,
body section, lateral, technic)

APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R000101630007-3"

"APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R000101630007-3

ANKUDINOV, V.A.

Training in the field of medical radiology at post-graduate medical institutes. Med.rad. 4 no.2:80-85 F '59. (MIRA 12:4)

1. Iz TSentral'nogo instituta usovershenstvovaniya vrachey (dir. V.P. Lebedeva).
(RADIOLOGY, educ.
postgraduate (Rus))

APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R000101630007-3"

"APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R000101630007-3

ANKUDINOV, V.A., kand. med. nauk

Importance of tomography in the recognition of pulmonary cancer. Trudy TSentr. nauch.-issl. inst. rentg. i rad. 10:35-40 '59. (MIRA 12:9)

(LUNGS--RADIOGRAPHY) (CANCER)

APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R000101630007-3"

"APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R000101630007-3

KOZLOVA, Anna Vasil'yevna, prof.; ANKUDINOV, Vladimir Alekseyevich; OMEL'YANENKO, Lyudmila Markovna; LANDAU, S.P., red.; POGOSKINA, M.V., tekhn.red.

[Manual on carrying out practical studies on the clinical aspects of radiation sickness; handbook for teachers] Rukovodstvo k provedeniiu prakticheskikh zaniatii po klinike luchevoi bolezni; posobie dlia prepodavatelei. Moskva, Gos.izd-vo med.lit-ry, 1960. 136 p. (MIRA 14:4)

1. Zaveduyushchiy kafedroy kliniki luchevoy bolezni i kombinirovannykh radiatsionnykh povrezhdeniy TSentral'nogo instituta usovershenstvovaniya vrachey (for Kozlova).
(RADIATION SICKNESS)

APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R000101630007-3"

"APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R000101630007-3

ANKUDINOV, V.A.

Protection of an X-ray technician in a fluorographic room.
Med. rad. 5 no.1:84 Ja '60. (MIRA 15:3)
(DIAGNOSIS, FLUOROSCOPIC--SAFETY MEASURES)

APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R000101630007-3"

"APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R000101630007-3

ANKUDINOV, V.A.; SEMIGLAZOVA, Ye.D.

Changes in liver function after prolonged exposure to ionizing radiations. Med.rad. 5 no.4:3-5 Ap '60. (MIRA 13:12)
(RADIATION SICKNESS) (LIVER)

APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R000101630007-3"

"APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R000101630007-3

S/205/61/001/004/022/032
D298/D303

AUTHORS: Silant'yev, Ye. I., Ankudinov, V. A., and Kolesov, S. G.

TITLE: Immunity to anthrax with exposure to ionizing radiation

PERIODICAL: Radiobiologiya, v. 1, no. 4, 1961, 580-582

TEXT: The aim of the work was to study the possibility of creating specific immunity to anthrax with exposure to ionizing radiation. An attempt was made to establish specific immunity in irradiated animals before and after immunization, after the elapse of the acute symptoms which normally continue for about 3 weeks. The tests were run on guinea pigs divided into 2 groups: group I--irradiation, immunization, infection; group II--immunization, irradiation, infection. Group I was irradiated with a ГУТ Co-400 (GUT So-400) telegamma apparatus at an intensity of 28 r/min. and group II with an РУМ-3 (RUM-3) apparatus at an intensity of 32 r/min. Each guinea pig received a single dose ranging from 170 - 185 r. A liquid, live anthrax vaccine containing 30 - 33 million live spores per ml was used for vaccination. It was found that

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"APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R000101630007-3

S/205/61/001/004/022/032
D298/D303

Immunity to anthrax...

general irradiation did not affect the formation of specific immunity to anthrax and did not change the animal's resistance to this infection after vaccination, provided that not less than 9 days had elapsed between immunization and irradiation. Immunized animals exposed to irradiation developed a slight degree of radiation sickness, but preserved their immunity to anthrax. Those animals exposed to radiation 2 - 3 weeks after immunization had developed a stable immunity to anthrax. Future research will establish the possibility of creating and preserving specific immunity in animals irradiated with larger doses of ionizing radiation. There are 3 Soviet-bloc references.

ASSOCIATION: Tsentral'nyy institut usovershenstvovaniya vrachey (Central Institute of Advanced Medical Training); Nauchno-kontrol'nyy institut veterinarnykh preparatov (Scientific Control Institute of Veterinary Preparations), Moscow

SUBMITTED: May 13, 1959

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APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R000101630007-3"

"APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R000101630007-3

ABARBANEL', Yelena Ernestovna; ANKUDINOV, V.A., red.; SENCHILO, K.K., tekhn. red.

[X-ray observations following radiocal operations on the lungs] Rentgenologicheskie nablliudeniia posle radikal'nykh operatsii na legkikh. Moskva, Medgiz, 1962. 210 p. (MIRA 15:6)
(LUNGS--RADIOGRAPHY) (LUNGS--SURGERY)

APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R000101630007-3"

"APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R000101630007-3

41115
S/016/62/000/011/001/001
D037/D112

27.3300

AUTHORS: Silant'yev, Ye.I., Ankudinov, V.A. and Kolesov, S.G.

TITLE: Anthrax immunity upon the action of ionizing radiation on the organism

PERIODICAL: Zhurnal mikrobiologii, epidemiologii i immunobiologii, no. 11, 1962, 121-123

TEXT: The purpose of this study was to examine the possibility of developing a specific immunity to anthrax in animals irradiated before and after inoculation with live anthrax vaccine. In experiments on two groups of guinea pigs the relationship between the anthrax immunity and a mild form of radiation sickness was studied. Three out of 22 animals irradiated prior to immunization perished. None of the animals irradiated after immunization died. Conclusions: (1) Radiation doses causing a relatively mild form of radiation sickness have no effect on the formation of a specific anthrax immunity and do not change the animal's resistance to this infection after vaccination, provided that the interval between immunization and

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"APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R000101630007-3

ANKUDINOV, V.A.; KEL'MAN, V.M.; KRESIN, O.M.; SYSOYEVA, I. [illegible]

Movement of charged particles in a uniform mag[illegible] intensity is a linear function of time. Zhur. [illegible] no.1:22-29 Ja '62. (MI [illegible])

1. Fiziko-tekhnicheskiy institut AN SSSR [illegible]ni A.F. [illegible], Leningrad. [illegible]
(Magnetic fields) (Electric fields) (Dynamics of a partic

APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R000101630007-3"

"APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R000101630007-3

SILANT'YEV, Ye.I.; ANKUDINOV, V.A.; KOLESOV, S.G.

Anthrax immunity following the effect of ionizing radiations on the body. Zhur. mikrobiol., epid. i immun. 33 no.11:121-123 N '62. (MIRA 17:1)

1. Iz TSentral'nogo instituta usovershenstvovaniya vrachey i Gosudarstvennogo nauchno-kontrol'nogo instituta veterinarnykh preparatov.

APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R000101630007-3"

"APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R000101630007-3

ANKUDINOV, V.A.; KEL'MAN, V.M.; SYSOYEVA, L.N.

Acceleration of charged particles by periodically varying magnetic fields. Zhur.tekh.fiz. 33 no.1:19-27 Ja '63. (MIRA 16:2)

1. Fiziko-tekhnicheskiy institut imeni A.F.Ioffe AN SSSR, Leningrad.
(Particles (Nuclear physics)) (Magnetic fields)

APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R000101630007-3"

"APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R000101630007-3

ACCESSION NR: AP4009092 S/0056/63/045/006/1759/1767

AUTHOR: Bobashev, S. V.; Andreyev, Ye. P.; Ankudinov, V. A.

TITLE: Excitation of Balmer hydrogen lines by passage of singly charged atomic and molecular hydrogen and tritium through helium and neon

SOURCE: Zhurnal eksper. i teoret. fiziki, v. 45, no. 6, 1759-1767

TOPIC TAGS: atomic hydrogen, molecular hydrogen, tritium, singly charged ion, hydrogen spectrum, Balmer hydrogen line, proton charge exchange, molecular hydrogen dissociation, tritium dissociation, auroral spectum thermonuclear magnetic trap, filling of magnetic trap, excitation probability, excitation cross section

ABSTRACT: The excitation cross sections for the first five Balmer lines of atomic hydrogen, produced by proton charge exchange and by dissociation of molecular-hydrogen and tritium ions passing through helium and neon, are measured under single collision conditions. The results of such measurements are helpful in quantitative inter-

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"APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R000101630007-3

ACCESSION NR: AP4009092

pretation of auroral spectra. They also concern the filling of thermonuclear devices such as magnetic traps by using highly excited atomic deuterium or hydrogen beams ionized in magnetic and electric fields. The relative excitation probabilities of these lines are shown to depend little on the kind of gas and incident ion in the ion energy range 5 -- 30 keV. An attempt is made to estimate the excitation cross sections for levels with principal quantum numbers n = 8, 9, and 10 by extrapolating the formula derived for the lower quantum numbers. "The authors consider it their pleasant duty to express deep gratitude to Prof. V. M. Dukel'skiy for daily guidance and also Prof. N. V. Fedorenko for continuous interest." Orig. art. has: 5 figures, 4 formulas, and 2 tables.

ASSOCIATION: None

SUBMITTED: 03Jun63 DATE ACQ: 02Feb64 ENCL: 02

SUB CODE: PH NO REF SOV: 005 OTHER: 010

Card 2/#2

APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R000101630007-3"

"APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R000101630007-3

ACCESSION NR: AP4020920 S/0051/64/016/002/0187/0192

AUTHOR: Andreyev, Ye.P.; Ankudinov, V.A.; Bobashev, S.V.

TITLE: Cross sections for excitation of the Balmer lines of atomic hydrogen in collisions of singly charged helium and neon ions with hydrogen molecules

SOURCE: Optika i spektroskopiya, v.16, no.2, 1964, 187-192

TOPIC TAGS: line excitation cross section, Balmer line excitation, particle collision, ion-molecule collision, hydrogen, neon, helium, Balmer series

ABSTRACT: In view of the currently renewed interest in excitation effects incident to particle collisions, there were measured in the present work the excitation cross sections for the first five lines of the Balmer series of atomic hydrogen in single collisions of singly charged He and Ne ions with hydrogen molecules. The measurements were carried out with the aid of a mass-spectrometric setup. The ion source was of the oscillating arc discharge type. The investigated ion energy range was from 5 to 35 keV. The resolution of the mass spectrometer was about 40. The dispersing instrument was a three-prism, glass-optics ISP-51 spectrograph coupled to an FEU-17A photomultiplier; the amplified photomultiplier signal was recorded by an

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"APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R000101630007-3

ACCESSION NR: AP4020920

EPP-09 recording potentiometer. The results are shown in Fig.1 of the Enclosure. Another figure shows the variation of the relative intensity of the H_β line (referred to the He^+ ion current for 20 keV) versus hydrogen pressure (the rise in intensity is a bit more rapid than linear). The intensity ratios of the successive line pairs are tabulated for He and Ne ions; except for the H_α/H_β ratio, which is larger for Ne, the ratios agree within the limits of the experimental error (about 10%). As will be evident from the figure, the cross sections for excitation with He ions are virtually constant, whereas for excitation with Ne ions the cross sections increase appreciably with increasing ion energy. The possible reactions leading to the appearance of the Balmer lines are discussed from the standpoint of the Massey hypothesis. "In conclusion, the authors express their sincere gratitude to V.M.Dukel'skiy for his constant help in carrying out the work and discussion of the results." Orig.art.has: 5 formulas, 5 figures and 1 table.

ASSOCIATION: none

SUBMITTED: 10Apr63 DATE ACQ: 02Apr64 ENCL: 01

SUB CODE: PH NR REF SOV: 002 OTHER: 010

Card 2/3

APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R000101630007-3"

"APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R000101630007-3

L 15055-65 EWT(1)/EWG(k)/EPA(sp)-2/EEC(b)-2/EPA(w)-2/EEC(t)/T/EWA(m)-2 Pz-6/
Po-4/Pab-10/Pi-4 IJP(c)/AEDC(b)/SSD/ASD(a)-5/AFWL/AS(mp)-2/ASD(p)-3/ESD(gs) AT/
ACCESSION NR: AP4045275 JAJ S/0057/64/034/009/1645/1648

AUTHOR: Ankudinov, V.A.; Bobashev, S.V.; Andreyev, Ye.P.

TITLE: Concerning the effect of multiple collisions on the formation of excited hydrogen atoms in helium and neon by charge transfer of protons and dissociation of singly charged diatomic and triatomic hydrogen molecule ions

SOURCE: Zhurnal tekhnicheskoy fiziki, v.34, no.9, 1964, 1645-1648

TOPIC TAGS: ion charge change, Balmer series, hydrogen, particle collision, neon, ion beam, molecular dissociation

ABSTRACT: The authors have measured the relative intensities of the H_α, H_β, H_γ and H_δ lines excited by the passage of 10 to 30 keV beams of H^+, H_2^+ or H_3^+ ions through He or Ne as functions of the target gas pressure. The measurements were undertaken as part of an investigation of methods of obtaining beams of highly excited atoms for injection into magnetic mirror systems as suggested by D.R.Sweetmann (Nucl.Fusion 2,27?,1962), and specifically, to determine whether the proportion of highly excited atoms in the beam would be increased by step-wise excitation resulting from multiple collisions. The authors have described their apparatus and technique else-

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"APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R000101630007-3

L 15055-65

ACCESSION NR: AP4045275

where (ZhETF,46,63,1964); the length of the beam within the target chamber was 3 cm. The intensities of the Balmer lines excited by H_2^+ and H_3^+ beams traversing He reached maxima (as functions of He pressure) at approximately 0.04 mm Hg and decreased slowly with further increase of pressure, whereas the intensities of the lines excited by a H^+ beam were still increasing with pressure at 0.16 mm Hg. When the effects of the three beams were compared at the same ion velocity (1.4×10^8 cm/sec) and the intensities of the lines were referred to the proton flux in the beam (i.e. the intensities per unit beam current for the H_2^+ and H_3^+ beams were divided by 2 and 3, respectively), it was found that the line intensities for the H_2^+ and H_3^+ beams were not greatly different, and were less than the line intensities for the H^+ beam when the target gas pressure exceeded 0.1 mm Hg. The ratio of the intensity of H_β to that of H_α was found to be greatest at low pressures; it decreased by about 25% as the target gas (He) pressure was increased to 0.04 mm Hg and remained constant thereafter. It is concluded that the cross section for dissociation of H_2^+ with the formation of an excited hydrogen atom is greater than that for charge transfer to H^+, and, with the aid of results obtained by J.Guilini (C.R.253,829,1961), that the cross section for charge transfer is greater than that for the excitation of a hydrogen atom. "The authors express their sincere gratitude to Prof.V.M.Dukel'skiy for his constant interest in the present work." Orig.art.has: 1 formula and 3 figs.

2/3

APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R000101630007-3"

"APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R000101630007-3

L 15055-65
ACCESSION NR: AP4045276

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

SUBMITTED: 07Dec63 ENCL: 00

SUB CODE: NP NR REF SOV: 001 OTHER: 004

3/3

APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R000101630007-3"

"APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R000101630007-3

ANKUDINOV, V.A.; KEL'MAN, V.M.; SYSOYEVA, L.N.

Acceleration of charged particles by variable magnetic fields. Zhur. tekh. fiz. 39 no.1:23-33 Ja '64. (MIRA 17:1)

1. Fiziko-tekhnicheskiy institut imeni A.F.Ioffe AN SSSR, Leningrad.

APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R000101630007-3"

"APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R000101630007-3

FEDORENKO, N.V.; ANKUDINOV, V.A.; IL'IN, R.N.

High-excited hydrogen atoms and Lorentz ionization. Zhur. tekh. fiz. 35 no.4:585-604 Ap '65. (MIRA 18:5)

1. Fiziko-tekhnicheskiy institut imeni Ioffe AN SSSR, Leningrad.

APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R000101630007-3"

"APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R000101630007-3

L 26060-65 EWT(1) IJP(c)

ACCESSION NR: AP5004371 S/0056/65/048/001/0040/0049

AUTHOR: Ankudinov, V. A.; Bobashev, S. V.; Andreyev, Ya. P.

TITLE: Measurement of the lifetimes of the excited states of hydrogen atoms

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 48, no. 1, 1965, 40-49

TOPIC TAGS: hydrogen atom, excited state, half life, fine structure, Balmer series, lifetime

ABSTRACT: A method is described for determining the lifetimes of atoms in excited states by observing the increase in the intensity of light radiated by a beam of fast atomic particles traversing a gas target. The lifetimes of the excited states are measured under the same physical conditions in which the excitation cross sections are measured. The method is used to measure the lifetimes of hydrogen atoms in states with n = 3, 4, 5, produced by dissociation of H_2^+ ions (energy range 10--30 keV) in helium. The theory of the method is developed in detail. The experimental apparatus was described by the authors in an earlier paper (ZhETF v. 45, 1759, 1963). A beam of hydrogen ions from a source was

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L 26060-65

ACCESSION NR: AP5004371

analyzed in a mass spectrometer with 180° deflection of the beam. The hydrogen ions with energy 10--30 keV were directed into a collision chamber filled with helium, where the hydrogen atoms were excited to the various levels. The first three lines of the Balmer series were used, with the 5,876 Å line of He I chosen as the comparison line. The values obtained for the lifetimes were 1.25 ± 0.1, 3.4 ± 0.15, and 7.8 ± 1.5 for the principal quantum numbers 3, 4, and 5, respectively, and are in good agreement with the values calculated by quantum mechanics for the case of "statistical population" of the fine-structure sublevels of the hydrogen atom. "The authors thank Professor V. M. Dukel'skiy for continuous help in the performance and discussion of the results of the present work." Orig. art. has: 2 figures, 14 formulas, and 1 table. [02]

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

SUBMITTED: 05Jun64 ENCL: 00 SUB CODE: NP

NO REF SOV: 003 OTHER: 005 ATD PRESS: 3186

Card 2/2

APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R000101630007-3"

"APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R000101630007-3

BOBASHEV, S.V.; ANKUDINOV, V.A., ANDREYEV, Ye.P.

Production of fast H atoms in excited states by proton charge exchange and the dissociation of H_2^+ and H_3^+ ions in helium and neon. Zhur. eksp. i teor. fiz. 48 no.3:833-836 Mr '65. (MIRA 18:6)

1. Fiziko-tekhnicheskiy institut imeni Ioffe AN SSSR.

APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R000101630007-3"

"APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R000101630007-3

ANKUDINOV, V.A. (Moskva); SIVERIKOVA, I.Ye. (Moskva)

Radiotherapy of malignant tumors of the mediastinum. Trudy TSentr. nauch.-issl. inst. rentg. i rad. 11 no.1:183-190 '64. (MIRA 18:11)

APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R000101630007-3"

"APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R000101630007-3

ANKUDINOV, V.A.

USSR/Electronics - Gas Discharge and Gas-Discharge Apparatus H-7

Abs Jour : Ref Zhur - Fizika, No 3, 1957, No 7165

Author : Fegel', Ya.M., Krupnik, L.I., Ankudinov, V.A.
Title : Formation of Negative Hydrogen Ions Upon Passage of Positive Hydrogen Ions Through a Ultrasonic Stream of Mercury Vapor.

Orig Pub : Zh. tekhn. fiziki, 1956, 26, No 6, 1208-1221

Abstract : Description of a setup and of a procedure developed for producing negative hydrogen ions, occurring by passage of a beam of positive hydrogen ions through a mercury vapor-stream target. The optimum operating conditions of the set-up are determined. The greatest number of negative ions occur at positive-ion energies of approximately 25 kev and at a stream thickness corresponding to a mercury temperature in the boiler of approximately 160°. The proposed source of negative ions has an intensity one order of magnitude greater (2 microamperes) than the Fito gas-discharge source, (Referat Zhur Fizika, 1955, 970). Bibliography, 15 titles.

Card : 1/1

APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R000101630007-3"

"APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R000101630007-3

SOV/56-34-3-8/55

AUTHORS: Fogel', Ya. M., ~~Ankudinov, V. A.~~, Pilipenko, D. V., Topolya, N. V.

TITLE: Electron Capture and -Loss in Collisions Between Fast Hydrogen Atoms and Gas Molecules (Zakhvat i poterya elektrona pri stolknoveniyakh bystrykh atomov vodoroda s molekulami gazov)

PERIODICAL: Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, 1958, Vol. 34, Nr 3, pp. 579-592 (USSR)

ABSTRACT: The authors determine by means of the mass-spectroscopic method the electron capture cross-section σ_{0-1} and σ_{01} and -loss in single collisions of hydrogen atoms (of an energy of up to from 5 to 40 keV) with helium-, neon-, argon-, crypton- and xenon atoms as well as with the molecules H_2, N_2 and O_2. The authors by σ_{ik} denote the cross section of a process in which a particle with the charge ie is transformed into a particle with the charge ke. The here worked out method makes possible besides the measurement of the cross sections σ_{0-1} and σ_{01} also the measurement of the cross section of the electron loss by an hydrogen atom, and therefore the present work also furnishes results of the measurement of this cross section.

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APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R000101630007-3"

"APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R000101630007-3

Electron Capture and -Loss in Collisions Between Fast Hydrogen Atoms and Gas Molecules SOV/56-34-3-8/55

First the apparatus and the method of measurements are discussed in detail by means of a diagram. Two diagrams show the dependence of σ_{0-1} and σ_{01} on the energy of the hydrogen atoms for monoatomic and molecular gases. Within the investigated energy range the cross section σ_{0-1} for the hydrogen atoms in He, Ne, H_2, N_2 and O_2 passes through a maximum. In the gases A, Kr and Xe the cross section σ_{0-1} decreases monotonously with increasing energy. The cross section σ_{0-1} changes within the limits $2.4 \cdot 10^{-18} cm^{-2}$ (in He, energy 5 keV) to $6.6 \cdot 10^{-17} cm^2$ (in Xe, energy 5 keV). In molecular gases the amount of σ_{0-1} does not depend on the type of gas, this is, however, the case in monoatomic gases. This dependence is especially clear at low energies. σ_{0-1} increases with increasing atomic number of the inert gas. σ_{01} decreases in all gases with the exception of helium at a decrease of the energy of the hydrogen atoms. In helium σ_{01} has its maximum at an energy of 15 keV. σ_{01} changes within the limits $4.2 \cdot 10^{-17} cm^2$ (in Kr, energy 5 keV) to $3.7 \cdot 10^{-16} cm^2$ (Xe and N_2, energy 40 keV). The cross sections σ_{01} exceed by one order of magnitude the cross sections σ_{0-1}. Then the results found are compared with those of other authors. The presence of maxima in the curves

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"APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R000101630007-3

SOV/56-34-3-8/55

Electron Capture and -Loss in Collisions Between Fast Hydrogen Atoms and Gas Molecules

$\sigma_{0-1} = f(E)$ in the gases He, Ne, H_2, N_2 and O_2 makes possible an estimation of the collision parameter for the corresponding processes. At table contains the values of the collision parameters which were computed by means of the adiabatic criterion by Massey (Messi). The dependence of the cross section σ_{0-1} on the binding energy of the electron can be expressed by the amount of the resonance defect $|\Delta E|$. The observed reduction σ_{0-1} at an increase of the absolute value of the resonance defect affirms the final conclusion on the reduction of this cross section with increasing energy of the binding of the electron in the atom of the target. There are 8 figures, 1 table, and 30 references, 8 of which are Soviet.

ASSOCIATION: Fiziko-tekhnicheskiy institut Akademii nauk Ukrainskoy SSR (Physical Technical Institut AS Ukrainian SSR)

SUBMITTED: September 30, 1957

Card 3/3

APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R000101630007-3"

"APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R000101630007-3

SOV/56-35-4-5/52

24(5)

AUTHORS: Fogel', Ya. M., Ankudinov, V. A., Pilipenko, D. V.

TITLE: Electron Capture and -Loss in Collisions of Fast Carbon- and Oxygen Atoms With Gas Molecules (Zakhvat i poterya elektrona pri stolknoveniyakh bystrykh atomov ugleroda i kisloroda s molekulami gazov)

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1958, Vol 35, Nr 4, pp 868-874 (USSR)

ABSTRACT: In an earlier paper (Ref 1) the authors had already measured the effective electron capture and -loss cross sections for collisions between fast H-atoms and gas molecules. These measurements are repeated for C- and O-atoms. The primary energies of these atoms are between 10 and 65 keV; collisions between He, Ne, Ar, Kr and Xe atoms and the molecules H_2, N_2 and O_2 are investigated. Measurements of the energy of atoms was carried out with an accuracy of ±3%; the σ_{O-}- and σ_{O+}- values attained only ±15% (chance errors). The results obtained by these measurements are shown by diagrams. Figure 1 shows the

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electron capture cross section for C in noble gases; figure 2 shows the capture cross section for C in molecular gases; figure 3 shows the capture cross section for O in noble gases, and figure 4 the same in molecular gases. Figures 5 - 8 show the same for the loss cross sections. Figure 9 shows the electron capture cross sections σ_{0-1}, σ_{1-1}, and σ_{01} for C and O, and figure 10 the cross sections for the capture of an electron by O-, C-, and H-atoms in a comparative diagram, figure 13 shows the same for electron loss. Figure 11 shows the course of the dependence of the maximum σ_{0-1} on the energy of the electron affinity for Ar, Kr, and Xe. The curves show an exponential growth of $\sigma_{0-1\ max}$ with affinity. Figure 11 shows a non-monotonous decrease for increasing V_{ioniz} for the dependence of the maximum σ_{0-1} on the first ionization potential of the target atom. Figure 14, finally, shows that for the dependence of v_{max} on ΔE (ΔE - resonance effect) the measured values in individual gases scatter within the error limits

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Electron Capture and -Loss in Collisions of Fast Carbon- and Oxygen Atoms With Gas Molecules SOV/56-35-4-5/52

around Massey's (Messi) straight; it may therefore be said that Massey's adiabatic criterion for electron capture processes by fast atoms is valid. For a, a $\approx$3Å is obtained. Measurements of the capture- and loss cross sections (Figs 1-10) in dependence on the energy (velocity v) of the atoms in general show a more or less steep increase of the cross sections with v, and in some cases a marked maximum (e. g. the electron capture cross section for Xe and Kr at 40-50 keV) and a linear decrease for H in Xe. N. V. Topolya took part in these measurements. The authors thank Professor A. K. Val'ter for his interest in the work. There are 14 figures and 8 references, 4 of which are Soviet.

ASSOCIATION: Fiziko-tekhnicheskiy institut Akademii nauk Ukrainskoy SSR (Physico-Technical Institute of the Academy of Sciences of the UkrSSR)

SUBMITTED: April 8, 1958

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APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R000101630007-3"

"APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R000101630007-3

ANKUDINOV, V. A., Candidate Phys-Math Sci (diss) -- "A study of the processes of capture and loss of electrons by atoms of H, He, B, C, O, and F in single collisions with gas molecules". Khar'kov, 1959. 13 pp (Min Higher Educ Ukr SSR, Khar'kov Order of Labor Red Banner State U im A. M. Gor'kiy), 150 copies (KL, No 24, 1959, 124)

APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R000101630007-3"

"APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R000101630007-3

66702

24.2120 SOV/109-4-8-22/35

AUTHORS: Granovskiy, V.L., Luk'yanov, S.Yu., Spivak, G.V. and Sirotenko, I.G.

TITLE: Report on the Second All-Union Conference on Gas Electronics

PERIODICAL: Radiotekhnika i elektronika, 1959, Vol 4, Nr 8, pp 1339 - 1358 (USSR)

ABSTRACT: The conference was organised by the Ac.Sc.USSR, the Ministry of Higher Education and Moscow State University. It was opened by the chairman of the organising committee, M.A. Leontovich, Academician. During the plenary sessions of the conference, a number of survey papers were delivered. L.A. Artsimovich read a paper on "Production of Ultra-high Temperatures in Plasma". A survey of the optical method of measurements was given in the papers by V.A. Fabrikant and S.E. Frish. S. Brown of the Massachusetts Institute of Technology gave a survey of the high-frequency methods of the investigation of stationary and non-stationary plasma (see p 1244 in this issue of the journal).

Card1/15 N.V. Fedorenko read a paper entitled "Ionisation and Inelastic Scattering During Atomic Collisions". X

L.A. Sena and Yu.M. Kagan deal with "Elementary Processes of Determining the Motion of Ions in Gas". A paper by Ye. Bedureu (Rumania) dealt with "The Role of Resonance--recharging in the Kinetics of Ions". I.S. Stakol'nikov considered the initial stages of the development of sparks (corona-leader, main channel and the final channel). B.N. Klyarfel'd gave a survey of the ignition processes of the discharges in highly rarified gases. The mechanism of the breakdown of a high-vacuum gap was elucidated in a paper by V.L. Granovskiy. L. Tonks (USA) expounded a theory of the motion of electrons in a magnetic trap (see p 1316 of this journal). Academician R. Rompe (Eastern Germany) described a number of experiments on non-stationary plasma conducted by himself. M. Steenbeck (Eastern Germany) gave a generalised theory of plasma. The conference was divided into six sections. The first section was presided over by L.A. Sena and was concerned with the elementary processes in gas discharges. The following papers were read in this section:

Ya.M. Fogel'- "Transformation of Positive Ions Into Negative Ones in Rarified Gases".

Ya. M. Fogel' with V.A. Ankudinov and D.V. Pilipenko - "Capture and Loss of Electrons During the Collision of Fast Atoms of Carbon and Hydrogen with the Molecules of Gases".

N.V. Fedorenko et al. - "Dissociation of Molecular Ions of Hydrogen During Collisions in Gas".

I.P. Flaks and Ye.S. Solov'yev - "Capture Cross-sections of Electrons in Multicharge Ions in Inert Gases".

E.M. Kushnir et al. - "Experimental Investigation of the Resonance Recharging in Certain Single-atom Gases and Metal Vapours".

O.B. Firsov - "Qualitative Investigation of Inelastic Collisions of Atoms".

L.M. Volkova - "Effective Excitation Cross-sections of the Spectral Lines of Potassium and Argon".

Card3/15 I.P. Zapesochnyy and S.M. Kishko "Some Results of the Investigation of the Optical Functions of the Excitation Bands of a Negative System".

A.A. Vorob'yev and A.G. Vlasov - "Investigation of the Scattering of the Electrons in a Betatron Chamber".

The second section was presided over by B.N. Klyarfel'd and was devoted to the problems of the electrical breakdown in rarified gases and in high vacuum. The following papers were read in this section:

G.Ya. Makar-Limanov and Yu.A. Metlitskiy - "Electrostatic Control of the Ignition of Glow-discharge Tubes"(see p 1274 of the journal).

S.V. Ptitsyn et al. were concerned with the breakdown in a high-voltage mercury rectifier (see p 1278 of the journal).

L.G. Guseva "Ignition of the Discharge in Non-uniform Fields at low Gas Pressures" (see p 1260 of the journal).

A.S. Soboleva and B.N. Klyarfel'd - "The Discharge Phenomena Between a Point and a Plane at Gas Pressures of 10^{-3} - 1 mm Hg".

ANKUDINOV, V.A.

APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R000101630007-3"

"APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R000101630007-3

FOGEL', Ya.M.; ANKUDINOV, V.A.; PILIPENKO, D.V.

Capture and loss of electrons in collisions of fast He, B, and F atoms with gas molecules. Zhur. eksp. i teor. fiz. 38 no.1: 26-32 Jan '60. (MIRA 14:9)
(Electrons--Capture) (Collisions (Nuclear physics))

APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R000101630007-3"

"APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R000101630007-3

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B104/B138

24.2500

AUTHORS: Ankudinov, V. A., Kel'man, V. M., Kresin, O. M., and Sysoyeva, L. N.

TITLE: Motion of charged particles in a uniform magnetic field the strength of which is linearly dependent on time

PERIODICAL: Zhurnal tekhnicheskoy fiziki, v. 32, no. 1, 1962, 22-29

TEXT: The motion of charged particles of mass m and charge e was studied in a uniform magnetic field $H_z = H_0 t + H_1$. H_0 and H_1 are constant. The electric field created by the variation in magnetic field strength is shown as $E_\varphi = -H_0 r/2c$. The equations of motion for a charged particle in nonrelativistic approximation read:

$$m(\ddot{r} - r\dot{\varphi}^2) = \frac{e}{c} r\dot{\varphi}(H_0 t + H_1), \quad \frac{m}{r}\frac{d}{dt}(r^2\dot{\varphi}) = -\frac{eH_0 r}{2c} - \frac{e}{c}\dot{r}(H_0 t + H_1), \quad m\ddot{z} = 0.$$

From the latter equation it follows that $z = \dot{z}_0 t + z_0$ (3), where $\dot{z}_0$ and z_0 are constant. Thus, the particles travel in an r-φ plane moving along the z-axis at constant velocity. By substituting

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B104/B138

Motion of charged particles ...

$$\omega_0 = \frac{eH_0}{2mc}, \quad \omega_1 = \frac{eH_1}{2mc}, \qquad (A)$$

in the equations of motion, one obtains

$$\ddot{r} - r\dot{\varphi}^2 = 2r\dot{\varphi}(\omega_0 t + \omega_1),$$
$$\frac{d}{dt}(r^2\dot{\varphi}) = -\omega_0 r^2 - 2r\dot{r}(\omega_0 t + \omega_1). \qquad (4)-(5).$$

Using the complex function $U = r\exp\left\{i(\varphi + \omega_0 t^2/2 + \omega_1 t)\right\}$, this system can be represented in the form $\ddot{U} + (\omega_0 t + \omega_1)^2 U = 0$ (7).

$$U = \sqrt{t + \frac{\omega_1}{\omega_0}}\left\{C_1 J_{1/4}\left[\frac{(\omega_0 t + \omega_1)^2}{2\omega_0}\right] + C_2 J_{-1/4}\left[\frac{(\omega_0 t + \omega_1)^2}{2\omega_0}\right]\right\}. \qquad (8)$$

is a solution of (7), J_n being the Bessel function. The constants in (8) are determined with the aid of an initial value problem, and

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$$U=\frac{\pi}{2}\sqrt[4]{\frac{x_0 x}{\omega_0^2}}\{\omega_1 r_0[J_{1/4}(x_0)J_{1/4}(x)+J_{-1/4}(x_0)J_{-1/4}(x)]+$$
$$+[\dot{r}_0+ir_0(\dot{\varphi}_0+\omega_1)][J_{-1/4}(x_0)J_{1/4}(x)-J_{1/4}(x_0)J_{-1/4}(x)]\}, \qquad (13)$$
$$x=\frac{(\omega_0 t+\omega_1)^2}{2\omega_0}, \text{ a } x_0=\frac{\omega_1^2}{2\omega_0}.$$

is obtained as solution. Since r is the amount of the complex function U, one has

$$r=\sqrt{UU^*}=\frac{\pi}{2}\sqrt[4]{\frac{x_0 x}{\omega_0^2}}\{r_0^2(\dot{\varphi}_0+\omega_1)^2[J_{-1/4}(x_0)J_{1/4}(x)-J_{1/4}(x_0)J_{-1/4}(x)]^2+$$
$$+[\omega_1 r_0(J_{1/4}(x_0)J_{1/4}(x)+J_{-1/4}(x_0)J_{-1/4}(x))+\dot{r}_0(J_{-1/4}(x_0)J_{1/4}(x)-$$
$$-J_{1/4}(x_0)J_{-1/4}(x))]^2\}^{1/2} \qquad (14)$$

(14)-(15).

$$\varphi=x_0-x+\operatorname{arc\,tg}\frac{r_0(\dot{\varphi}_0+\omega_1)}{\dot{r}_0+\omega_1 r_0\dfrac{J_{1/4}(x_0)J_{1/4}(x)+J_{-1/4}(x_0)J_{-1/4}(x)}{J_{-1/4}(x_0)J_{1/4}(x)-J_{1/4}(x_0)J_{-1/4}(x)}}. \qquad (15)$$

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"APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R000101630007-3

DOBASHEV, S.V.; ANDREYEV, Ye.P.; ANKUDINOV, V.A.

Excitation of Balmer series spectral lines of atomic hydrogen during the passage of H^+, H_2^+, H_3^+ ion beams through helium and neon. Zhur. eksp. i teor. fiz. 45 no.6:1758-1767 D '63. (MIRA 17:2)

1. Fiziko-tekhnicheskiy institut imeni A.F. Ioffe AN SSSR.

APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R000101630007-3"

"APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R000101630007-3

ANKUDINOV, [illegible].A.; BOMASHEV, S.V.; ANDREYEV, Ye.[illegible].

Effect of multiple collisions on the formation of excited hydrogen atoms due to the charge exchange of protons and dissociation H_2^+ and [illegible] molecular ions in helium and neon. Zhur. tekh. fiz. 34 no.9:1645-1648 S '64. (MIRA 17:10)

1. Fiziko-tekhnicheskiy institut imeni Ioffe AN SSSR, Leningrad.

APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R000101630007-3"

"APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R000101630007-3

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ACCESSION NR: AP5010795 UR/0057/65/035/004/0585/0604

51
50
B

AUTHOR: Fedorenko, N.V.; Ankudinov, V.A.; Il'in, R.N.

TITLE: Highly excited hydrogen atoms and Lorentz ionization 21

SOURCE: Zhurnal tekhnicheskoy fiziki, v. 35, no. 4, 1965, 585-604

TOPIC TAGS: charge exchange, excited state, excitation spectrum, atomic beam, ion beam, ion charge change, ion injection, ion neutralization, hydrogen injection, hydrogen plasma, magnetic mirror, electric field, magnetic field, dissociation, plasma injection, plasma trapping

ABSTRACT: This is a review article concerned with the ionization of excited atoms and dissociation of molecular ions as a result of the Lorentz forces on the constituent electrons and nuclei due to motion in a magnetic field (Lorentz ionization), and with techniques for producing beams of highly excited hydrogen atoms. The interest in these matters stems from their possible application to the injection of hydrogen plasma into magnetic mirror systems. No new material is presented in this paper, but many known facts are informatively discussed and there is a bibliography of 40 papers from 1930 to 1965. Most of the space is devoted to discussion of

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ACCESSION NR: AP5010795

methods for obtaining highly excited hydrogen atom beams; among the methods considered are dissociation of fast hydrogen molecule ions by collision with atoms or by the action of external fields, charge exchange collisions of protons with atoms or molecules, and the method of J.S.Lee et al (Bull. Am. Phys. Soc., 11, 9, 469, 1964) involving the passage of a hydrogen molecule ion beam through an arc discharge. The radiation life time of excited hydrogen atoms is also discussed at some length. It is concluded that most desirable for injection purposes would be a beam of excited hydrogen atoms with the excitation spectrum sharply peaked in the range of principal quantum numbers between 6 and 15, and that the greatest hope of obtaining such a beam probably lies in the development of optical pumping methods. Orig. art. has: 7 formulas, 11 figures, and 4 tables.

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

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L 20984-66 EWT(m)/EWP(t) IJP(c) JD

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S/0056/65/048/003/0833/0836

AUTHOR: Bobashev, S. V.; Ankudinov, V. A.; Andreyev, Ye. P.

TITLE: Production of fast hydrogen atoms in excited states in proton charge exchange and dissociation of H_2^+ and H_3^+ ions in helium and neon

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 48, no. 3, 1965, 833-836

TOPIC TAGS: excitation cross section, hydrogen ion, charge exchange, gas dissociation, helium, neon

ABSTRACT: In a previous study [S. V. Bobashev, Ye. P. Andreyev, V. A. Ankudinov, ZhETF, 45, 1759, 1963] data were published on the Balmer hydrogen spectrum which is produced when protons and H_2^+ and H_3^+ ions with energies in the 5—[illegible] kev range are passed through helium and neon. However, the authors feel that the results of this study are unreliable since there is some doubt about the predominant excitation of p-states due to the fact that formation and luminescence of the excited atoms in these previous experiments took place in a rather strong magnetic field ([illegible] oe). In an attempt to correct possible errors, direct measurement was used to determine the average lifetimes for excited states of fast hydrogen atoms produced

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during dissociation of H_2^+ and H_3^+ ions under conditions identical to those of the previous experiments. The results of these measurements for levels with $n = 3, 4, 5$ [V. A. Ankudinov, S. V. Bobashev, Ye. P. Andreyev, ZhETF, 48, 40, 1965] agree well with quantum mechanical calculations for the case of statistical population of sublevels in the fine structure. In the present article, excitation cross sections are given for hydrogen atoms produced during proton charge exchange and dissociation of H_2^+ and H_3^+ ions (10–130 kev) for excitation to levels with $n = 3$–7 (see Table 1 of the Enclosure). It is shown that if the population of the sublevels in the fine structure is statistical, then the cross section for excitation of the levels varies as $n^{2.5}$. "The authors are grateful to Professor V. M. Dukel'skiy for interest in this work." Orig. art. has: 2 tables, 4 formulas. [02]

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

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Table 1

Excitation cross sections for hydrogen atoms (10^{-18} cm^2) for excitation to levels with $n = 3 - 7$

n	Ion energy, kev			Ion energy, kev			Ion energy, kev		
	10	20	35	10	20	35	10	20	35
	H^+, He			H_2^+, He			H_3^+, He		
3	1.6	2.2	3.2	[illegible]	19	19	[illegible]	19	18
4	0.69	1.1	1.6	4.0	[illegible]	5.0	[illegible]	[illegible]	[illegible]
5	0.55	0.87	1.1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
6	0.39	0.70	0.99	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
7	0.29	0.58	0.70	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	H^+, Ne			H_2^+, Ne			H_3^+, Ne		
3	4.6	9.0	[illegible]	19	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
4	2.2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
5	1.3	3.5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
6	1.0	2.3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
7	0.82	2.0	0.82	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

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L 22259-66 EWT(m) DIAAP

ACC NR: AP6010977 SOURCE CODE: [illegible]

AUTHOR: Andreyev, Ye. P.; Ankudinov, V. A.; [illegible]

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

TITLE: Charge exchange of protons in inert gases with the formation of fast hydrogen atoms in the 2s and 2p states

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. [illegible], no. [illegible], 1966, 565-575

TOPIC TAGS: charge exchange, metastable state, noble gas, proton collision excitation cross section, hydrogen atom, proton, inert gas

ABSTRACT: The excitation cross sections $\sigma(2s)$ and $\sigma(2p)$ for the 2s and 2p states of hydrogen atoms produced during charge exchange of [illegible] keV protons in Ne, Ne, Ar, Kr, and Xe are determined by measuring the intensity of the first line of the [illegible] series. The metastable 2s state of the hydrogen atom was destroyed by an electric field in the charge exchange chamber. The absolute intensity of the [illegible] line was determined from the photoionization current in nitrogen oxide. In the proton energy range investigated, the cross section $\sigma(2s)$ was found to increase monotonically in helium; in all other cases the curves for dependence of $\sigma(2p)$ and $\sigma(2s)$ on energy contained maxima. The peak values of the cross sections increased with increasing atomic number of the target gas and reached values as high as $\sigma_m(2s) = 8.7 \cdot 10^{-17}$ cm^2 (Xe, E = 17 keV) and $\sigma_m(2p) = 1.3 \cdot 10^{-15}$ cm^2 (Xe, E = 11 keV). For proton energies

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E < 25 keV the cross section σ(2s) + σ(2p), for E > 25 keV the ratio σ(2s)/σ(2p) + 1 increased with decreasing atomic number of the target gas. (For helium σ(2s)/σ(2p) = 1 at E = 40 keV)

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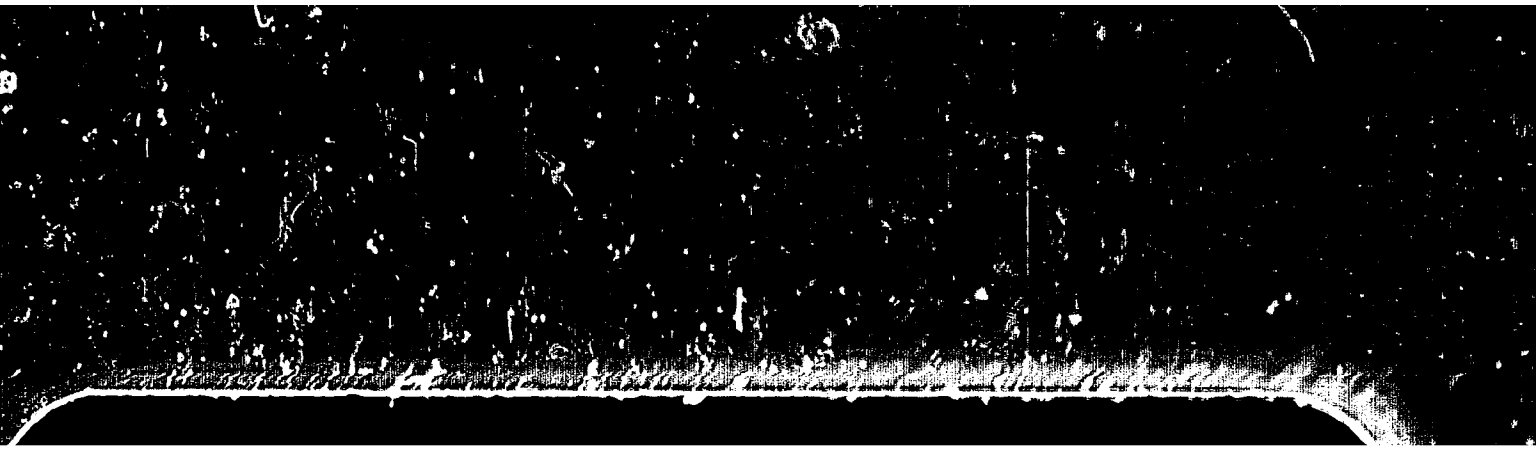

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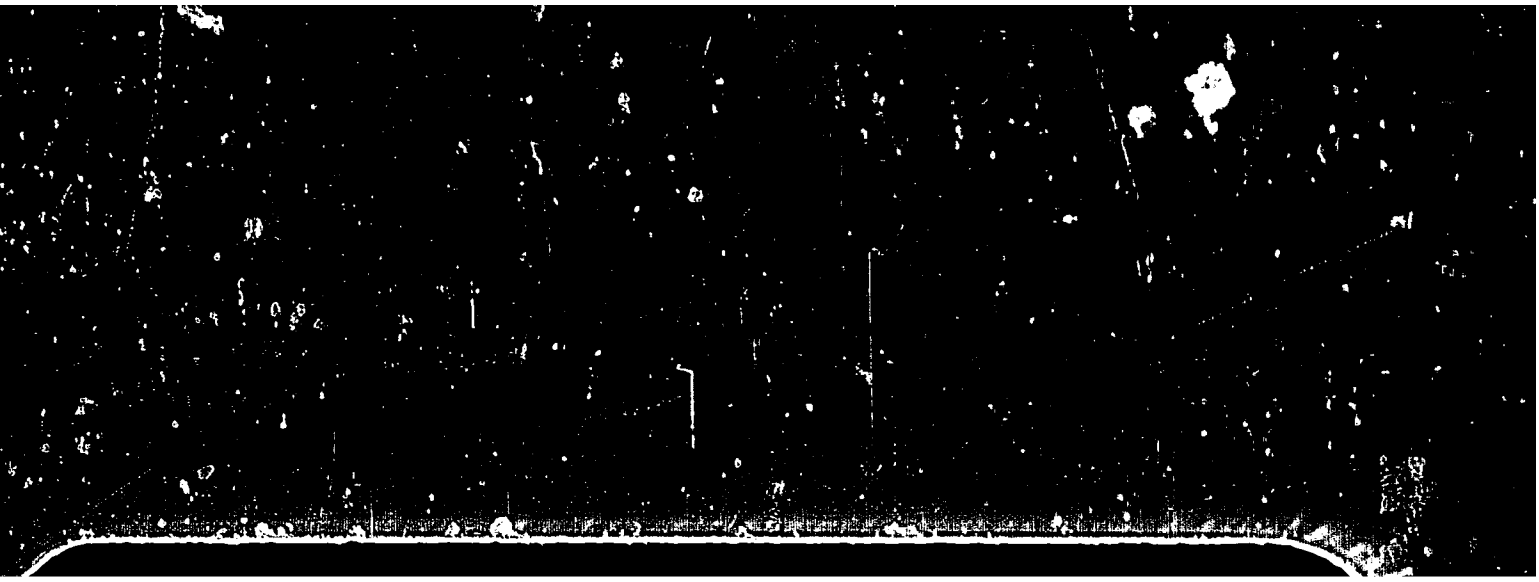

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