85

см. Актиниды.

Es^{+3}

Fields P. R., | 1964
Wybourne B. G., Carnall W. T.

Contract W-31-109-eng-38.

The electronic energy levels of the heavy actinides $Bk^{+3}(5f^8)$, $Cf^{+3}(5f^9)$, $Es^{+3}(5f^{10})$, and $Fm^{+3}(5f^{11})$.

(cm. Bk^{+3})

ВФ-94-VIII 1967

9 Б 3

4 Д207. **Чувствительные искровые линии эйнштейния.** Gutmacher Ralph G., Evans James E., Hulet E. Kenneth. Sensitive spark lines of einsteinium. «J. Opt. Soc. Amer.», 1967, 57, № 11, 1389—1390 (англ.)

Впервые зарегистрирован ряд спектральных линий Es в области 2500—4500 Å. Образец Es был получен нейтронным облучением 0,7 *г* смеси изотопов Cm (с массами от 244 до 248) в течение 10 месяцев. Спектры возбуждали в искровом разряде между графитовыми электродами в атмосфере смеси 70% He+30% O_2 и фотографировали спектрографом с обратной линейной дисперсией 10 Å/*мм*. В качестве реперных использовали линии искро-

9 · 1968 · 4

вого спектра Fe. Ошибка измерения длин волн не превышала ±0,03 Å. Длины волн (в Å) и относит. интенсивности зарегистрированных линий Es равны: λλ 3300,04 (10), 3498,17 (100), 3547,72 (300 C), 3602,42 (1000 C), 3669,92 (1000 C), 3728,39 (100), 3939,96 (30), 3965,16 (10) и 3988,28 (10). Линии, обозначенные индексом C, обладают шириной сверхтонкой структуры ~2—4 $см^{-1}$.

В. И. Мосичев

Es

Cmrp

BP-94-VIII

1967

64214j Sensitive spark lines of einsteinium. Ralph G. Gutmacher, James E. Evans, and E. Kenneth Hulet (Lawrence Radiation Lab., Univ. of California, Livermore). *J. Opt. Soc. Amer.* 57(11), 1389–90(1967)(Eng). The Es spark lines were studied spectrographically in a 70% He-30% O atm. at 2500–4500 A. with 10 A./mm. dispersion. Nine sensitive lines are tabulated with their relative intensities. The 3547.72 and 3602.42 A. lines were most persistent and showed, with the 3669.92 A. line, partially resolved hyperfine structure with widths of 2–4 cm.$^{-1}$ FBJN

C.A. 1968. 68. 14

253 1968

Es 253

спектр

12 Д243. Сверхтонкая структура в эмиссионном спектре Es^{253}. Worden Earl F., Gutmacher Ralph G., Lougheed Ronald W., Evans James E., Conway John G. Hyperfine structure in the ^{253}Es emission spectrum. «J. Opt. Soc. Amer.», 1968, 58, № 7, 998—1000 (англ.)

Сфотографировано шесть линий эмиссионного спектра Es^{253} (3420—3806 Å) на дифракционном спектрографе Эберта (дисперсия 0,3 Å/*мм*) с помощью описанной ранее (РЖФиз, 1964, 2Д551) безэлектродной разрядной лампы. Приведены длины волн, ширины и общее описание линий. Все шесть линий спектра Es^{253} имеют сверхтонкую структуру. Для линии 3498 Å, имеющей восемь хорошо разрешенных компонент сверхтонкой структуры, определены волн. числа, относит. интенсивности компонент, а также интервалы между ними. Проведено обсуждение характера сверхтонкого расщепления, исходя из известного по данным ядерного распада значения спина ядра Es^{253} ($I=7/2$). А. Д.

99. 1968 · 12D

E.S

Leo Brewer 1971

J. Opt. Soc. Amer.

1971, 61, N8

1101 – 1111.

энергия
энергетические
состояния

Физические свойства

Es^{+}, Es^{+2}, Es^{+3}

(оп. 28644)

1971

Brewer L.,

J. Opt. Soc. Amer.,
1971, 61, N 12, 1666-1682.

Энерг. и электрон. конфигурации

Es

1973

(y)

Suger Jack.

"J.Chem.Phys.", 1973, 59, №2. 788-791.

(см. Ac ; III)

Es | | | Ommuch 2970 1974

W. Martin, L. Hagan.
et al.

(J) J. Phys. Chem. Ref. Data
1974, 3 n 3, 771-80

1974

Es

Sugar J.

J. Chem. Phys., 1974,

60, N10, 4103-04.

(J, T, ΔT термы)

(см. Ra; III)

Es (I); Es (II); 1974

(спектр ценуг.).

102003x Hyperfine structure in the einsteinium-253 emission spectrum. III. Extension of the line list, levels of einsteinium (Es I) and einsteinium (Es II), nuclear magnetic-dipole, and quadrupole moments. Worden, Earl F.; Lougheed, R. W.; Gutmacher, R. G.; Conway, John G. (Lawrence Livermore Lab., Livermore, Calif.). *J. Opt. Soc. Amer.* 1974, 64(1), 77–85 (Eng). New observations of the Es emission spectrum, increased the no. of obsd. lines from 53 to 290 at 2600–6900 Å. Ten lines were assigned as transitions to the $5f^{11}7s^2\ {}^4I_{15/2}^\circ$ ground state of Es I on the basis of reversal and hyperfine structure. The next odd level is ${}^4I_{13/2}^\circ$ at 8759.25 cm^{-1}. The lowest even level is

(Ei)

C.A. 1974. 80. N18

$^6I_{15/2}$ of the $5f^{11}7s7p$ configuration at 17,802.89 cm^{-1}. The lowest level of the $5f^{10}6d7s^2$ configuration is $^6I_{17/2}$ at 19,367.93 cm^{-1}. Fifteen lines are classified as transitions between Es I levels. Twenty-three lines are assigned as transitions to the 2 known lowest levels of Es II. The hyperfine consts. $a_{5f} = 0.033 \pm 0.001$ cm^{-1} and $b_{5f} = 0.48 \pm 0.06$ cm^{-1} were derived by an anal. of the hyperfine structure of assigned Es II lines. From these consts. for ^{253}Es, the nuclear magnetic dipole moment of $+3.6 \pm 0.4$ μ_N and a quadrupole moment of $+6.0 \pm 0.8$ barn were obtained.

1978

Es

David F., et. al.

J. Inorg. and Nucl. Chem.,
I978, 40, NI, 69-74.

Fre

Coll. Ac-I

$EsCl_2$
$EsBr_2$
EsI_2
$CfCl_2$
$CfBr_2$
CfI_2

1978

structure).

90: 214394p **Preparation, characterization, and decay of einsteinium(II) in the solid state.** Peterson, J. R.; Ensor, D. D.; Fellows, R. L.; Haire, R. G.; Young, J. P. (Tennessee Univ., Knoxville, Tenn.). *Report* 1978, ORO-4447-075, CONF-780823-3, 7 pp. (Eng). Samples of $EsCl_2$, $EsBr_2$, and EsI_2 were prepd. for the 1st time by redn. of the corresponding Es trihalides with H gas at elevated temps. The 3 dihalides were characterized primarily by their absorption spectra. The products of the decay of EsX_2 samples held at ambient and liq. He temps. were monitored by spectrophotometry. In all cases pos. identification of the granddaughter, CfX_2, species was made. No definite spectral evidence for the presence of the possible daughter products BkX_2 was obtained.

(cheetz)

(+1) ☒

C.A. 1979, 90, N26

Es

1979

Seeier K.D.

(a) At. Data Nucl. Data Tables
1979, 24(4), 323-41

cal. Pm-147

Es

Om. 19440

1984

Bratsch S. G., Lagoiv-
ski J. J.,
Chem. Phys. Lett.,
1984; 109, N 1, 114

Ae;

Es 1989

Guo Yufei, Winn M. C.; et al.

Ae Phys. Rev. A. 1989. 40, N11. C. 6685-6688.

(ccq. He; III)

E30

cm 38 311

1995

Haire R.G.,

(Do) J. of Alloys and Compounds
1995, 225, 142-146.

Es 1998

Erdmann N., et al.,

(γ) J. Alloys Compd. 1998,
Резонансно-ионизационный 271–273, 837–840
масс-
спектром.

(см. Am; ● III)

Es 1998

Passler C., et al.,

AIP Conf. Proc. 1998,

(9, экспер.) 454, 183 - 188

(см. Am; III)

Es

1998

129: 113788p **Determination of the first ionization potential of einsteinium by resonance ionization mass spectroscopy (RIMS).** Peterson, J. R.; Erdmann, N.; Nunnemann, M.; Eberhardt, K.; Huber, G.; Kratz, J. V.; Passler, G.; Stetzer, O.; Thorle, P.; Trautmann, N.; Waldek, A. (Department of Chemistry, University of Tennessee, Knoxville, TN 37996-1600 USA). *J. Alloys Compd.* **1998**, 271-273, 876-878 (Eng), Elsevier Science S.A.. The first ionization potential of einsteinium (IP_{Es}) was detd. by resonance ionization mass spectroscopy (RIMS) using samples with $\leq 10^{12}$ atoms of ^{254}Es ($T_{1/2}$=276 days). This method is based on the measurement of photoionization thresholds as a function of applied elec. field strength, followed by extrapolation to zero field strength to yield IP_{Es}. An at. beam of Es was created by heating a filament on which einsteinium was electrodeposited from an aq. soln. onto a tantalum backing and covered with titanium metal. Es atoms were ionized via a three-step excitation scheme, and the ions mass-selectively detected in a time-of-flight (TOF) mass spectrometer. The excitation scheme used included a previously unknown EsI level at 32924.9 cm^{-1}. Furthermore, an autoionizing state at 51447.3 cm^{-1} was also found. The first ionization potential of Es was detd. to be 6.3676(5) eV (51358(5) cm^{-1}).

(9)

CA 1998, 129, 9

E3

2001

Waldek, Achim, et al.,

(Y) AIP Conf. Proc. 2001, 584, 219-224

(cit. Ac, ● III)