Adopted Levels, Gammas

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Shaofei Zhu and E. A. Mccutchan	NDS 175, 1 (2021)	1-May-2021

Q(β^-)=1018 11; S(n)=5051 7; S(p)=9.26×10^3 3; Q(α)=2692 SY 2021Wa16

ΔQ(α)=200 (2021Wa16).

S(2n)=8776.7 20; S(2p)=17780 (syst) 300 (2021Wa16).

^{214}Pb (RaB) was first identified as a descendent of ^{226}Ra decay chain, by Rutherford and Barnes (1904Ru04) in a study of
radiations from radium (^{226}Ra), as reviewed in article 2013Fr04.

α: Additional information 1.

^{214}Pb Levels

Cross Reference (XREF) Flags

A	^{218}Po α decay (3.097 min)
B	^{9}Be(^{238}U,Xγ)

E(level)[†]	J$^{\pi}$[#]	T$_{1/2}$	XREF	Comments
0.0[‡]	0$^+$	27.06 min 7	AB	%β^-=100 T$_{1/2}$: from 2011Vo01; Others: 26.8 min (1931Cu01) and 26.89 min 3 (1991Ma68). The discrepancy between result of 2011Vo01 and 1991Ma68 was attributed to the loss of ^{214}Bi from pumping in the measurement of 1991Ma68, as demonstrated in 2011Vo01. δ<r^2>=+0.610 fm^2 5 was deduced from the measured isotopic shift 11503 MHz 20 relative to ^{208}Pb (1986An06). The rms charge radius <r^2>$^{1/2}$=5.5577 fm 23 was deduced from δ<r^2>=+0.610 fm^2 5 (2013An02).
835[‡] 1	(2$^+$)		AB	J$^{\pi}$: HF for α transition from ^{218}Po is consistent with (2$^+$) assignment.
1179[‡] 2	(4$^+$)		B	
1365[‡] 2	(6$^+$)		B	
1365+x?[‡]	(8$^+$)	6.2 μs 3	B	%IT=100 E(level): x < 88 keV (2012Go19). T$_{1/2}$: from γ(t) decay curve (2012Go19).

[†] From Eγ values, assuming 1 keV uncertainty for each γ ray.

[‡] Seq.(A): Yrast cascade.

[#] The transitions in the yrast cascade are attributed to E2 transitions with the assumption that the isomer is predominantly a fully aligned pair of neutrons with a (g$_{9/2}$)^2 configuration (2012Go19).

γ(^{214}Pb)

E$_i$(level)	J$^{\pi}_i$	E$_{\gamma}$[†]	I$_{\gamma}$	E$_f$	J$^{\pi}_f$	Mult.	α	Comments
835	(2$^+$)	835	100	0.0	0$^+$	[E2]	0.00953	α(K)=0.00745 11; α(L)=0.001582 23; α(M)=0.000380 6; α(N)=9.63×10^{-5} 14; α(O)=1.87×10^{-5} 3 α(P)=1.732×10^{-6} 25
1179	(4$^+$)	344	100	835	(2$^+$)	[E2]	0.0777 13	α(K)=0.0474 8; α(L)=0.0228 4; α(M)=0.00581 11; α(N)=0.00147 3; α(O)=0.000272 5 α(P)=1.78×10^{-5} 3
1365	(6$^+$)	186	100	1179	(4$^+$)	[E2]	0.552 14	α(K)=0.199 4; α(L)=0.264 8; α(M)=0.0691 19; α(N)=0.0174

Adopted Levels, Gammas (continued)

$\gamma(^{214}$Pb$)$ (continued)

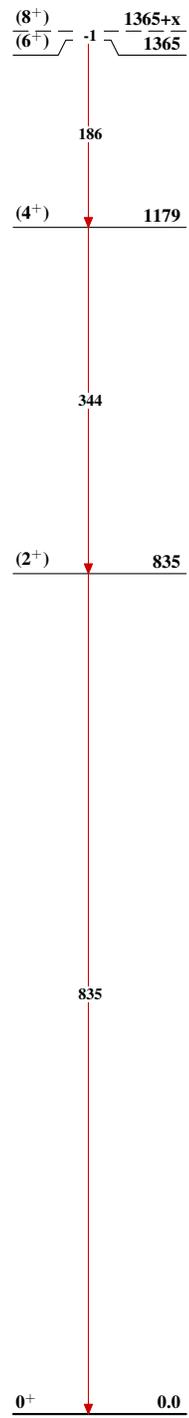| E_i(level)	J^π_i	E_γ [†]	I_γ	E_f	J^π_f	Mult.	Comments
							5; α(O)=0.00315 9
							α(P)=0.000153 4
1365+x?	(8$^+$)	x	100	1365	(6$^+$)	[E2]	E_γ: transition to (6$^+$) level was not seen in γ-ray spectra, x is assumed to be smaller than 88 keV based on the observation that the intensity of K$_\alpha$ x rays was only compatible with that from the internal conversion of the 6$^+$ to 4$^+$ transition (2012Go19).

[†] From ^{9}Be(^{238}U,Xγ).

Adopted Levels, Gammas

Level Scheme

Intensities: Relative photon branching from each level
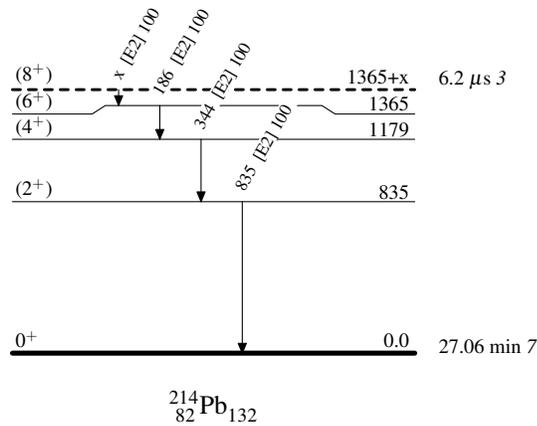
$^{214}_{82}$Pb$_{132}$

Adopted Levels, Gammas

Seq.(A): Yrast cascade

(8+)	-1	1365+x
(6+)		1365

186

(4+)   1179

344

(2+)   835

835

0+   0.0

$^{214}_{82}\text{Pb}_{132}$