

^{214}Ra IT decay **2006Ku26**

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

Parent: ^{214}Ra : $E=1865.2$ 11; $J^\pi=8^+$; $T_{1/2}=67.8$ μs 15; %IT decay=99.91 7

^{214}Ra -%IT decay: %IT=99.91 7, % α =0.09 7, estimated using ratio of I_α and I_γ from the isomeric decay (2006Ku26).

2006Ku26: $^{214\text{m}}\text{Ra}$ was produced in $^{170}\text{Er}(^{48}\text{Ca},4n)$ reaction with a beam at 4.25 and 4.30 MeV/A; evaporation residues (ER)

were separated in-flight by the velocity filter SHIP and implanted into 16-strip PIPS silicon detectors at the focal plane. γ rays from the decay were detected by a clover detector with four HPGe crystals. Measured E_γ , I_γ , $\gamma\gamma$, E_α , I_α , $\alpha\gamma$ coin, ce, lifetimes based on time and position correlations.

α : [Additional information 1](#).

 ^{214}Ra Levels

E(level) [†]	J^π [‡]	$T_{1/2}$ [‡]	Comments
0.0	0 ⁺	2.444 s 20	
1382.30 10	2 ⁺		
1639.30 15	4 ⁺		
1819.71 18	6 ⁺		
1865.2 11	8 ⁺	67.8 μs 15	$T_{1/2}$: other: 68.6 μs 20 from 1382 γ (t) (2006Ku26).

[†] From E_γ , assuming $\Delta E(45.5\gamma)=1$ keV.

[‡] From the Adopted Levels.

 $\gamma(^{214}\text{Ra})$

E_γ [†]	E_i (level)	J_i^π	E_f	J_f^π	Mult. [‡]	α	Comments
45.5	1865.2	8 ⁺	1819.71	6 ⁺	E2	414 15	$\alpha(L)=304$ 11; $\alpha(M)=82.3$ 29; $\alpha(N)=21.7$ 8; $\alpha(O)=4.60$ 16; $\alpha(P)=0.659$ 23; $\alpha(Q)=0.00133$ 4 E_γ : not observed, taken from 1992St09 and 1996FiZX by 2006Ku26.
180.4 1	1819.71	6 ⁺	1639.30	4 ⁺	E2	0.856 12	$\alpha(K)=0.1958$ 27; $\alpha(L)=0.485$ 7; $\alpha(M)=0.1313$ 19; $\alpha(N)=0.0347$ 5; $\alpha(O)=0.00742$ 11 $\alpha(P)=0.001095$ 16; $\alpha(Q)=9.70\times 10^{-6}$ 14
257.0 1	1639.30	4 ⁺	1382.30	2 ⁺	E2	0.2472 35	$\alpha(K)=0.0977$ 14; $\alpha(L)=0.1103$ 16; $\alpha(M)=0.0295$ 4; $\alpha(N)=0.00779$ 11; $\alpha(O)=0.001678$ 24 $\alpha(P)=0.000253$ 4; $\alpha(Q)=4.04\times 10^{-6}$ 6
1382.3 1	1382.30	2 ⁺	0.0	0 ⁺	E2	0.00493 7	$\alpha(K)=0.00390$ 5; $\alpha(L)=0.000755$ 11; $\alpha(M)=0.0001816$ 25; $\alpha(N)=4.78\times 10^{-5}$ 7 $\alpha(O)=1.081\times 10^{-5}$ 15; $\alpha(P)=1.848\times 10^{-6}$ 26; $\alpha(Q)=1.297\times 10^{-7}$ 18

[†] From 2006Ku26 unless otherwise noted.

[‡] From γ intensity balances (2006Ku26).

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Decay Scheme

%IT=99.91 7

