^{174}**Yb(^{40}Ar,5nγ)**   **2008Ha12**

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	J. Chen [#] and F. G. Kondev	NDS 126, 373 (2015)	30-Sep-2013

2008Ha12: E=192 MeV (at mid-target) beam provided by the U400 cyclotron at JINR, Dubna. Target is 350 μg/cm^2 Yb$_2$O$_3$ (98.1% enriched) on a 1.5 μm Ti backing. Evaporation residues were transported by the VASSILISSA separator and implanted into a 16-strip Si detector of the GABRIELA setup. γ-rays were detected by 7 Ge detectors. Measured Eγ, Iγ, γ(t), Eα, α(t), E(ce), I(ce), ce(t). Deduced levels, T$_{1/2}$, γ-ray transition multipolarities, conversion coefficients.

^{209}Ra Levels

E(level)[†]	J$^{\pi}$[‡]	T$_{1/2}$[‡]	Comments
0.0	5/2$^-$	4.8 s 2	
644.4 5	9/2$^-$		
882.8 7	13/2$^+$	117 μs 5	T$_{1/2}$: from 2008Ha12, weighted average of 115 μs 7 from 644.4γ(t) and 118 μs 6 from 238-KLM(t). Other: 88 μs 31 from 238.4γ(t). configuration: ν(i$_{13/2}$)$^{-1}$.

[†] From a least-squares fit to Eγ.
[‡] From Adopted Levels, unless otherwise stated.

γ(^{209}Ra)

E$_{\gamma}$[‡]	E$_i$(level)	J$_i^{\pi}$	E$_f$	J$_f^{\pi}$	Mult.	α[†]	Comments
238.4 5	882.8	13/2$^+$	644.4	9/2$^-$	M2	5.38	α(K)=3.81 6; α(L)=1.164 17; α(M)=0.298 5; α(N+..)=0.1010 15 α(N)=0.0796 12; α(O)=0.0181 3; α(P)=0.00308 5; α(Q)=0.000221 3 Mult.: from α(K)exp=4.0 5 (2008Ha12).
644.4 5	644.4	9/2$^-$	0.0	5/2$^-$	E2	0.0218	α(K)=0.01554 22; α(L)=0.00472 7; α(M)=0.001188 17; α(N+..)=0.000395 6 α(N)=0.000313 5; α(O)=6.95×10^{-5} 10; α(P)=1.131×10^{-5} 16; α(Q)=5.52×10^{-7} 8 Mult.: α(K)exp<0.034 and K/L>3 (2008Ha12) are consistent with E1 or E2, but E1 is ruled out, since the placement in level scheme requires E2 Mult.

[†] Additional information 1.
[‡] From 2008Ha12.

^{174}**Yb(^{40}Ar,5nγ)   2008Ha12**

Level Scheme

$^{209}_{88}$Ra$_{121}$