

Adopted Levels, Gammas

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh, ¹ and Jun Chen ²		NDS 169, 1 (2020)	15-Oct-2020

S(n)=11213 26; S(p)=1788 25; Q(α)=7693 7 [2017Wa10](#)

S(2n)=20162 24, S(2p)=1327 17, Q(ϵ p)=5991 19 ([2017Wa10](#)).

Other measurements:

[1996Ba35](#), [1997Ba25](#): ^{190}Po produced and identified in $^{144}\text{Sm}(^{48}\text{Ti},2n)$, E=215 MeV; and $^{96}\text{Mo}(^{96}\text{Mo},2n)$, E=420 MeV; reactions at ORNL accelerator facility; measured E α , I α , T $_{1/2}$; deduced α -decay reduced widths.

[1997An09](#), [1999An22](#), [2000An14](#), [2001An07](#): ^{190}Po produced and identified in $^{144}\text{Sm}(^{48}\text{Ti},2n)$, E=202,208,221 MeV; and $^{142}\text{Nd}(^{52}\text{Cr},4n)$ reactions; measured E α , I α , (α)(ce)-coin, α (x-ray)-coin, $\alpha\gamma$ -coin, half-life; Deduced HF. Experiments carried out at JYFL, Jyvaskyla and GSI accelerator facilities.

[2003Va05](#): $^{142}\text{Nd}(^{52}\text{Cr},4n)$, E=255 MeV; measured E γ , I γ , (recoil) γ -coin, T $_{1/2}$ of decay of ^{190}Po .

Analysis of mass measurement data: [2002No01](#).

[Additional information 1](#).

Theory references: consult the NSR database (www.nndc.bnl.gov/nsr/) for about 50 primary references dealing with nuclear structure and other calculations.

 ^{190}Po LevelsCross Reference (XREF) Flags

- A** ^{194}Rn α decay (0.78 ms)
B $^{142}\text{Nd}(^{52}\text{Cr},4n\gamma)$
C $^{144}\text{Sm}(^{49}\text{Ti},3n\gamma)$

E(level) [†]	J π [‡]	T $_{1/2}$	XREF	Comments
0.0 [#]	0 ⁺	2.45 ms 5	ABC	% α =100 % ϵ +% β^+ =0.1 (from systematics). T $_{1/2}$: from 2000An14 , 2001An07 (other less precise values from the same group are: 2.5 ms 1 in 2003Va05 , 2.53 ms 33 in 1999An22 , 1.9 ms +6-4 in 1997An09). Other: 2.0 ms +5-10 in 1997Ba25 and 1.7 ms 8 in 1996Ba35 , in agreement with the adopted value here, but less precise. Value of 10 ms +47-4 reported by 1988QuZZ is discrepant, and probably as misassignment of the activity to ^{190}Po .
234.1 [#] 9	(2 ⁺)		BC	
532.4 [#] 9	(4 ⁺)		BC	
901.8 [#] 10	(6 ⁺)		BC	
1338.7 [#] 10	(8 ⁺)		BC	
1837.2 [#] 12	(10 ⁺)		C	
2402.2 [#] 15	(12 ⁺)		C	
3040.2 [#] 18	(14 ⁺)		C	

[†] From E γ data.

[‡] From systematics of even-even nuclei and yrast band structure.

[#] Band(A): g.s. band.

Adopted Levels, Gammas (continued)

$\gamma(^{190}\text{Po})$

$E_i(\text{level})$	J_i^π	$E_\gamma^\dagger$	I_γ	E_f	J_f^π
234.1	(2 ⁺)	234.1 9	100	0.0	0 ⁺
532.4	(4 ⁺)	298.3 1	100	234.1	(2 ⁺)
901.8	(6 ⁺)	369.4 2	100	532.4	(4 ⁺)
1338.7	(8 ⁺)	436.9 2	100	901.8	(6 ⁺)
1837.2	(10 ⁺)	498.5 6		1338.7	(8 ⁺)
2402.2?	(12 ⁺)	565.0 [‡] 10		1837.2	(10 ⁺)
3040.2?	(14 ⁺)	638.0 [‡] 10		2402.2?	(12 ⁺)

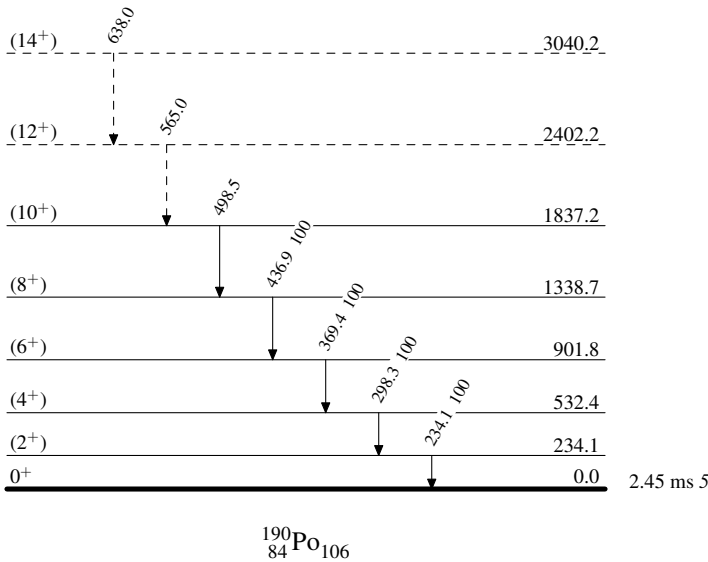
[†] From ¹⁴⁴Sm(⁴⁹Ti,3n γ).
[‡] Placement of transition in the level scheme is uncertain.

Adopted Levels, Gammas

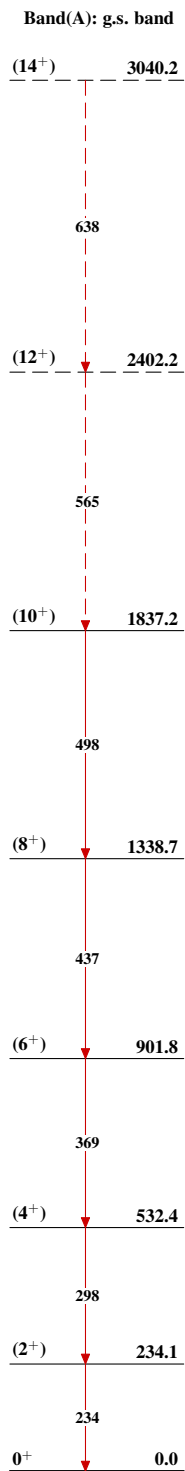
Legend

Level Scheme

Intensities: Relative photon branching from each level
-----► γ Decay (Uncertain)



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 $^{190}_{84}\text{Po}_{106}$