^{192}At α decay (11.5 ms) 2006An04

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	F. G. Kondev, S. Juutinen, D. J. Hartley	NDS 150, 1 (2018)	1-Feb-2018

Parent: ^{192}At: E=0.0; $T_{1/2}$=11.5 ms *6*; Q(α)=7696 *26*; %α decay=100.0

2006An04 (also 2005AnZY): ^{192}At produced in ^{144}Sm(^{51}V,3n) reaction at E(^{51}V)=230 MeV *1* at the middle of target (enrichment 96.5%).The evaporation residues were separated by velocity filter SHIP at GSI, and implanted into position-sensitive silicon (PSSD) detector. FWHM=25-35 keV. Measured Eα, Iα, γ, $\alpha\gamma$ coin. Gamma rays measured with a four-fold segmented Clover Ge detector. The α spectrum is complicated by summing of the ce and α signals in the PSSD detector. Analyzed correlated recoil-α1−α2 chains. GEANT Monte-Carlo simulations for ce+α summing.

^{188}Bi Levels

E(level)[†]	J$^{\pi}$[‡]	$T_{1/2}$[‡]	Comments
0.0	(3^+)	60 ms *3*	Configuration $\pi 1h_{9/2}\otimes\nu 3p_{3/2}$ proposed by the authors.
65 *29*		>5 μs	E(level): From energy difference between the 7535 keV and 7470 keV α decays. $T_{1/2}$: Estimated value in 2006An04, based on the non-observation of summing of 7470α keV and ce signals from the 65 keV level.
101 *29*			
172 *29*			

[†] From Eα differences.
[‡] From Adopted Levels.

α radiations

Eα	E(level)	Iα[‡]	HF[†]
7363 *15*	172	12 *2*	8.4 *19*
7435 *15*	101	56 *4*	3.0 *5*
7470 *15*	65	31 *3*	7.1 *13*
7535 *25*	0.0	<1.0	>307

[†] r_0=1.537 *26*, obtained as average of r_0 values for the neighboring even-even nuclei: $r_0(^{186}Pb)$=1.510 *2*, $r_0(^{188}Pb)$=1.511 *8* and $r_0(^{190}Po)$=1.590 *11*, the later calculated by the evaluators from $T_{1/2}$=0.78 ms *16*, Eα=7700 keV *10* and HF=1.0.
[‡] Absolute intensity per 100 decays.

$\gamma(^{188}Bi)$

E$_\gamma$	E$_i$(level)	E$_f$	Mult.	Comments
36 *1*	101	65	E1	Mult.: The number of 36γ-7435α coincidences implies a small α(exp).

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Decay Scheme