^{173}Ir α decay (9.3 s) 1992Sc16

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Coral M. Baglin	ENSDF	15-Mar-2015

Parent: ^{173}Ir: E=0.0; J^π=(1/2$^+$,3/2$^+$); $T_{1/2}$=9.3 s *6*; Q(α)=5716 *10*; %α decay=4 *2*

^{173}Ir-%α decay: From 2004GoZZ. other %α: <6 *1* (1992Sc16).

1992Sc16: source from ^{141}Pr(^{36}Ar,xn), E=175-204 MeV; measured α excit, Eα, Iα, Eγ, Iγ, I(K x ray), α-(K x ray) coin, $\alpha\gamma$ coin, α(t); deduced α branching; Si and Ge detectors.

2012Po01: calculation of ^{173}Ir α decay half-life.

Parent J^π has not been established; however, based on energy systematics of orbitals in neighboring Ir isotopes, the 3/2[402] and 5/2[402] orbitals are expected at very low excitation in ^{173}Ir, probably below the 5/2$^-$ 1/2[541] state which forms the g.s. for ^{175}Ir through ^{185}Ir (1992Sc16).

Parent $T_{1/2}$=9.3 s *6* from unweighted average of 9.8 s *14* (1992Sc16), 8.1 s *3* (1992Bo21) and 10 s *1* (2004GoZZ). The weighted average of these data is 8.4 s *4*.

Parent J^π: from 2001Ko44.

^{169}Re Levels

E(level)	J^π †	$T_{1/2}$ †	Comments
0.0+x *27*	(1/2$^+$,3/2$^+$)	15.1 s *15*	E(level): x=175 *13* (2012Au07). If Q(α)=5716 *10* (2012Wa38) is correct, Eα to this level implies x=170 *11*; not consistent with the known E=215.9 *4* J=(3/2) level.

† From Adopted Levels.

α radiations

Eα	E(level)	Iα ‡	HF †	Comments
5418 *4*	0.0+x	100	6 *4*	Eα: weighted average of 5416 *10* (1992Sc16) and 5418 *5* (2004GoZZ). correlated with 5060α from ^{169}Re (2004GoZZ). HF: if E(^{173}Ir)=175 *13* (2012Au07) and Q(α)=5716 *10* (2012Wa38).

† r_0=1.556 *20* (based on r_0 for ^{168}W (1.56 *2*) and ^{170}Os (1.553 *14*) in 1998Ak04).

‡ For absolute intensity per 100 decays, multiply by 0.04 *2*.