^{72}Co β^-2n decay 2016Mo07

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	G. Gürdal, E. A. Mccutchan	NDS 136, 1 (2016)	1-Jul-2016

Parent: ^{72}Co: E=0+x; J^π=(6$^-$,7$^-$); $T_{1/2}$=51.5 ms *3*; Q(β^-2n)=3.29×10^3 *40*; %β^-2n decay>0.0

Parent: ^{72}Co: E=0+y; J^π=(0$^+$,1$^+$); $T_{1/2}$=47.8 ms *5*; Q(β^-2n)=3.29×10^3 *40*; %β^-2n decay>0.0

^{72}Co(0+x)-J^π,$T_{1/2}$: From 2016Mo07. $T_{1/2}$ was measured from decay curve of β-decay activity gated on 454γ.

^{72}Co(0+x)-%β^-2n decay: Beta-delayed two-neutron emission was claimed by 2016Mo07 to have been seen in the decay of ^{72}Co.

^{72}Co(0+y)-J^π,$T_{1/2}$: From 2016Mo07. Half-life was measured from decay curve of β-decay activity gated on 1680γ, 1689γ, 1732γ, 2023γ, 2538γ, 650γ, 22885γ, 3040γ and 3383γ in ^{72}Ni (^{72}Co β-decay).

^{72}Co(0+y)-%β^-2n decay: Beta-delayed two-neutron emission was claimed by 2016Mo07 to have been seen in the decay of ^{72}Co.

^{72}Co isotope produced in ^{9}Be(^{238}U,F),E=345 MeV/nucleon at RIBF-RIKEN facility. Fission fragments were separated and analyzed through ΔE-Bρ-tof technique using BigRIPS separator and ZeroDegree spectrometer. The implanted residues were counted using the WAS3ABi setup equipped with DSSSDs for ion, β, conversion electrons and EURICA array of 12 seven-element HPGe detectors for γ-ray detection.

^{70}Ni Levels

E(level)†	J^π‡
0	0$^+$
1260	2$^+$
2230	4$^+$

† From Eγ values. The order of the levels adopted from the Adopted Levels of ^{70}Ni since no level scheme was given in 2016Mo07.

‡ From the Adopted Levels.

γ(^{70}Ni)

Eγ†	E$_i$(level)	J_i^π	E$_f$	J_f^π	Comments
970	2230	4$^+$	1260	2$^+$	
1260	1260	2$^+$	0	0$^+$	Eγ: 970 in Fig. 1 of 2016Mo07 seems a misprint, energy scale suggests Eγ is close to 1260 keV.

† From β-gated singles γ spectrum (Fig. 1 in 2016Mo07), assigned by the authors to ^{70}Ni from the β-2n decay of ^{72}Co.

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Decay Scheme