^{58}Ni α decay 2009Jo03,2001Ru03

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Yang Dong, Huo Junde	NDS 121, 1 (2014)	20-Jun-2014

Parent: ^{58}Ni: E=16795; $J^{\pi}=15^{-}$; Q(α)=6399.2 *4*; %α decay=100.0

2009Jo03: ^{58}Ni from ^{28}Si(^{36}Ar,α2p) E=136, 143, and 148 MeV, measured Eγ, Iγ,$\gamma\gamma$-coin, (charged Particle)γ-coin, gammasphere, microball arrays. The 16797 keV *3* and 17582 keV *3* states of ^{58}Ni were observed to α decay by emission of a prompt discrete a particle, respectively, both a particles feed the 2949 keV *6+* yrast state in the daughter nucleus ^{54}Fe.

2001Ru03: ^{58}Ni was produced by ^{28}Si(^{36}Ar,α2p) E=143 MeV, measured Eγ, Iγ, $\gamma\gamma$-coin, (charged Particle)γ-coin, gammasphere, microball arrays. The 16795 state of ^{58}Ni was observed to α decay by emission of a prompt discrete a particle that feeds the 2949 keV *6+* spherical yrast state in the daughter nucleus ^{54}Fe.

All data are from 2009Jo03, except as noted.

Decay scheme is only listed for 16797 state α decay of ^{58}Ni.

^{54}Fe Levels

E(level)	J^{π}
0	0^+
1408	2^+
2538	4^+
2949	6^+

α radiations

Eα	E(level)	Iα[†]	Comments
7447 *3*	2949	2.6 *3*	Eα: From difference in level energies in 2009Jo03. Iα: The 16797 keV was found to decay via a 2.6% 3 discrete a branch into the 2949 state in the daughter nucleus ^{54}Fe (2009Jo03). Other: 3.9% 3 (2001Ru03).

[†] Absolute intensity per 100 decays.

$\gamma(^{54}Fe)$

Iγ normalization: From Iα=2.6 *3*.

Eγ	Iγ[†‡]	E$_i$(level)	J^{π}_i	E$_f$	J^{π}_f
411	95 *8*	2949	6^+	2538	4^+
1130	99 *9*	2538	4^+	1408	2^+
1408	100 *7*	1408	2^+	0	0^+

[†] From 2001Ru03.
[‡] For absolute intensity per 100 decays, multiply by 0.026 *3*.

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Decay Scheme

Intensities: $I_{(\gamma+ce)}$ per 100 parent decays