

^{52}Ni ϵp decay (40.8 ms) 2007Do17

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	Wang Jimin and Huang Xiaolong		NDS 144, 1 (2017)	1-Mar-2016

Parent: ^{52}Ni : $E=0$; $J^\pi=0^+$; $T_{1/2}=40.8$ ms 2; $Q(\epsilon\text{p})=10580$ SY; $\% \epsilon\text{p}$ decay=31.4 15

^{52}Ni - $Q(\epsilon\text{p})$: 10580 400 (syst,2017Wa10).

^{52}Ni - $T_{1/2}$: By time correlation of implantation events due to ^{52}Ni and subsequent emission of protons and γ rays (2007Do17).

^{52}Ni - $\% \epsilon\text{p}$ decay: $\% \epsilon\text{p}=31.4$ 15 (2007Do17).

^{52}Ni - $\% \epsilon\text{p}$ decay: Total proton branching ratio is from time spectrum of events with energy >900 keV in the charged-particle spectrum. Possible small contributions from delayed- α and delayed-2p decays are ignored (2007Do17).

2007Do17: Fragmentation reaction used to produce ^{52}Ni isotope at SISSE/LISE3 facility in GANIL. Primary beam: $^{58}\text{Ni}^{26+}$ at 74.5 MeV/nucleon; target=natural Ni. Fragment separator= α -LISE3. Fragment identification by energy loss, residual energy and time-of-flight measurements using two micro-channel plate (MCP) detectors and Si detectors. Double-sided silicon-strip detectors (DSSSD) and a thick Si(Li) detector were used to detect implanted events, charged particles and β particles. The γ rays were detected by four Ge detectors. Coincidences measured between charged particles and γ rays.

 ^{51}Fe Levels

E(level)	J^π	Comments
0	$5/2^-$	J^π : From Adopted Levels.

Delayed Protons (^{51}Fe)

E(p) [†]	E(^{51}Fe)	I(p) [‡]	E(^{52}Co)	Comments
2815 23		0.9 4		
1057 [#] 11	0	2.9 3	X	E(^{52}Co): x is a 1^+ state in ^{52}Mn , mirror nucleus of ^{52}Co , mentioned by 2007Do17 from an unpublished work $^{52}\text{Cr}(^3\text{He,t})^{52}\text{Mn}$.
1349 10	0	9.4 13	2931	E(^{52}Co): IAS, 0^+ in ^{52}Co .

[†] The proton energies are in the center-of-mass system.

[‡] Absolute intensity per 100 decays.

[#] Placement of transition in the level scheme is uncertain.

^{52}Ni ϵ p decay (40.8 ms) 2007Do17Decay Scheme

I(p) Intensities: I(p) per 100 parent decays

