

^{70}Fe β^- decay 2013Ma87

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

Parent: ^{70}Fe : $E=0.0$; $J^\pi=0^+$; $T_{1/2}=65$ ms 6; $Q(\beta^-)=10610$ SY; $\% \beta^-$ decay=100.0

2013Ma87: ^{70}Fe activity produced in fragmentation of a ^{86}Kr beam at $E=140$ MeV/nucleon on a ^9Be target. Isotopes separated with the A1900 spectrometer and identified through ΔE and time-of-flight measurements. Measured $E\gamma$, $I\gamma$, $\beta\gamma$ coincidences using the SeGA array consisting of 12 segmented HPGe detectors and a DSSD.

A single 274γ is observed in the β -gated spectrum correlated with a ^{70}Fe implant. This could correspond to the β^- or β^-n decay of ^{70}Fe . Since a 273.25 transition is observed to depopulate the 54-ns isomer in ^{70}Co , 2013Ma87 tentatively place the 274γ as belonging to the β^- decay. However, this then creates a discrepancy with the proposed $J^\pi=(4^-)$ assignment to the 54-ns isomer, as population from the 0^+ ground state of ^{70}Fe is highly unlikely.

 $\gamma(^{70}\text{Co})$

E_γ
 $^x274^\dagger$ 1

† Observed in β -gated spectrum correlated with an implanted ^{70}Fe .

x γ ray not placed in level scheme.