^{142}Pr ε decay 1968Ra04

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	T. D. Johnson, D. Symochko(a), M. Fadil(b), and J. K. Tuli	NDS 112, 1949 (2011)	1-Jun-2010

Parent: ^{142}Pr: E=0.0; $J^\pi=2^-$; $T_{1/2}$=19.12 h *4*; Q(ε)=745.8 *24*; %ε decay=0.0164 *8*
Measured: γ semi (1968Ra04), branching (from the ratio of accumulated ^{142}Ce and ^{142}Nd nuclei) (1966Cr02).
Decay scheme is that of 1968Ra04.
$\varepsilon/\beta^-=1.64\times10^{-4}$ *8* from ^{142}Ce/^{142}Nd accumulated in the ^{142}Pr decay (1966Cr02).

^{142}Ce Levels

E(level)	J^π†
0.0	0^+
642.0 *10*	2^+

† Adopted values.

ε radiations

E(decay)	E(level)	Iε†	Log *ft*	Comments
(104 *3*)	642.0	0.0022 *8*	7.93 *17*	εK=0.705 *7*; εL=0.225 *5*; εM+=0.0701 *17*
(745.8 *24*)	0.0	0.0142 *12*	9.42[1u] *4*	εK=0.8209 *2*; εL=0.1389 *1*; εM+=0.04028 *4*

† Absolute intensity per 100 decays.

γ(^{142}Ce)

Iγ normalization: from I(1576γ,^{142}Pr β^- decay)=3.68% *42* (1963Me15) and I(642γ)/I(1576γ)=0.0006 *2*.

E_γ	I_γ†	E_i(level)	J_i^π	E_f	J_f^π	Comments
642.0 *10*	100	642.0	2^+	0.0	0^+	I_γ: I(642γ)/I(1576γ,^{142}Pr β^- decay)=0.0006 *2* (1968Ra04).

† For absolute intensity per 100 decays, multiply by 2.21×10^{-5} *13*.

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Decay Scheme

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