^{242}Pu(d,tγ) 1975Ya03

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	C. D. Nesaraja	NDS 130, 183 (2015)	30-Sep-2015

1975Ya03: 16 MeV pulsed deuterons beam from the Argonne National Laboratory tandem Van de Graaff bombarded a 0.5 g ^{242}Pu target. Gammas detected with a 11-cm^3 intrinsic Ge detector with FWHM =1.1 keV for 122-keV γ of ^{57}Co. Lifetime of E2 transitions between 1/2$^+$[631] and 5/2$^+$[622] single particle states measured in ^{241}Pu by pulsed beam technique.

^{241}Pu Levels

The authors calculate B(E2) for the 161.4 level using the 5/2[622] and 1/2[631] Nilsson states as the initial and finals states, respectively. They obtained B(E2)=0.538×10^{-4} e^{2}b^2. When they included the pairing corrections the calculations yielded B(E2)(Nilsson + pairing)=0.075×10^{-4} e^{2}b^2. The enhancement of the 161.4 E2 transition was explained as due to possible admixtures of collective components in the nuclear wave functions. Second-order Coriolis coupling between the two bands was also considered.

E(level)	J$^\pi$	T$_{1/2}$	Comments
0.0	5/2$^+$		
161.4 *2*	1/2$^+$	0.88 μs *5*	B(E2)↑=6.57×10^{-5} *1* T$_{1/2}$: From decay curve of the 1/2$^+$[631] state. B(E2)↑: Recalculated by evaluator using authors' T$_{1/2}$ and α=1.98 value of BrIcc (2008Ki07).

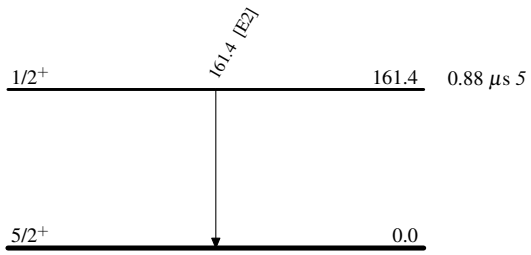
γ(^{241}Pu)

E$_\gamma$	E$_i$(level)	J$_i^\pi$	E$_f$	J$_f^\pi$	Mult.	$\alpha^\dagger$	Comments
161.4 *2*	161.4	1/2$^+$	0.0	5/2$^+$	[E2]	1.98	α(K)=0.190 *3*; α(L)=1.299 *20*; α(M)=0.362 *6* α(N)=0.0996 *15*; α(O)=0.0235 *4*; α(P)=0.00381 *6*; α(Q)=2.33×10^{-5} *4*

† Additional information 1.

^{242}Pu(d,tγ) 1975Ya03

Level Scheme



$^{241}_{94}Pu_{147}$