^{244}Pu(^{18}O,^{20}Neγ) 2007Is09

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	M. J. Martin, C. D. Nesaraja	NDS 186, 261 (2022)	31-Dec-2021

E=200 MeV. Outgoing ^{20}Ne detected with Si ΔE-E detectors. Deexcitation γ's in coincidence with the outgoing nuclei were measured by Ge detectors surrounding the target.

^{242}U Levels

E(level)	Jπ†
0	0^+
47.8 *3*	2^+
158.2 *7*	4^+
327.5 *8*	6^+
552.2 *8*	8^+

† Assigned by the authors as the g.s. rotational band based on the moment of inertia and a comparison with bands in adjacent nuclides.

γ(^{242}U)

Eγ	Iγ‡	Ei(level)	J_i^π	Ef	J_f^π	Mult.	α#	I(γ+ce)†	Comments
(47.8 *3*)	0.37 *15*	47.8	2^+	0	0^+	[E2]	451 *15*	170 *70*	ce(L)/(γ+ce)=0.728 *18*; ce(M)/(γ+ce)=0.201 *9* ce(N)/(γ+ce)=0.0545 *25*; ce(O)/(γ+ce)=0.0125 *6*; ce(P)/(γ+ce)=0.00202 *10*; ce(Q)/(γ+ce)=4.95×10^{-6} *23* α(L)=329 *11*; α(M)=90.8 *31* α(N)=24.6 *8*; α(O)=5.64 *19*; α(P)=0.913 *31*; α(Q)=0.00224 *7* Iγ: deduced using Rosel's α= 462 *20*. Eγ: Transition not seen. The energy is derived by the authors from the moment of inertia deduced from the higher levels. I(γ+ce): From an intensity balance at the 47.8 level.
110.4 *6*	18 *7*	158.2	4^+	47.8	2^+	[E2]	8.42 *25*	170 *70*	ce(L)/(γ+ce)=0.651 *13*; ce(M)/(γ+ce)=0.181 *6* ce(N)/(γ+ce)=0.0490 *19*; ce(O)/(γ+ce)=0.0113 *4*; ce(P)/(γ+ce)=0.00185 *7*; ce(Q)/(γ+ce)=8.16×10^{-6} *29* α(L)=6.13 *18*; α(M)=1.70 *5* α(N)=0.462 *13*; α(O)=0.1062 *31*; α(P)=0.0174 *5*; α(Q)=7.68×10^{-5} *18* Iγ: deduced using Rosel's α= 8.6 *4*.
169.3 *3*	41 *8*	327.5	6^+	158.2	4^+	[E2]	1.416 *22*	100 *20*	ce(K)/(γ+ce)=0.0810 *13*; ce(L)/(γ+ce)=0.368 *5*; ce(M)/(γ+ce)=0.1017 *17* ce(N)/(γ+ce)=0.0276 *5*; ce(O)/(γ+ce)=0.00637 *12*; ce(P)/(γ+ce)=0.001058 *20*; ce(Q)/(γ+ce)=8.22×10^{-6} *14* α(K)=0.1958 *28*; α(L)=0.890 *14*;

Continued on next page (footnotes at end of table)

^{244}Pu(^{18}O,^{20}Neγ) 2007Is09 (continued)

γ(^{242}U) (continued)

E_γ	I_γ ‡	E_i(level)	J_i^π	E_f	J_f^π	Mult.	α #	$I_{(\gamma+ce)}$ †	Comments
									α(M)=0.246 *4* α(N)=0.0667 *11*; α(O)=0.01539 *25*; α(P)=0.00256 *4*; α(Q)=1.987×10^{-5} *30* I_γ: deduced using Rosel's α= 1.44 *5*.
224.7 *3*	30 *9*	552.2	8$^+$	327.5	6$^+$	[E2]	0.490 *7*	44 *14*	ce(K)/(γ+ce)=0.0854 *12*; ce(L)/(γ+ce)=0.1778 *23*; ce(M)/(γ+ce)=0.0488 *7* ce(N)/(γ+ce)=0.01324 *21*; ce(O)/(γ+ce)=0.00306 *5*; ce(P)/(γ+ce)=0.000515 *8*; ce(Q)/(γ+ce)=6.20×10^{-6} *9* α(K)=0.1273 *18*; α(L)=0.265 *4*; α(M)=0.0727 *11* α(N)=0.01972 *30*; α(O)=0.00456 *7*; α(P)=0.000767 *12*; α(Q)=9.24×10^{-6} *13* I_γ: deduced using Rosel's α= 0.499 *16*.

† The authors give only Iγ(1+α) with α taken from 1978Ro21.

‡ Deduced by the evaluators from I(γ+ce) and α taken from Rosel's conversion coefficients (1978Ro21) using the BrIcc interactive code. The values are provided in comments.

Additional information 1.