^{173}Yb(^{24}Mg,Fγ) 2002Fo03

History			
Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Coral M. Baglin	NDS 112, 1163 (2011)	15-Dec-2010

E=134.5 MeV; isotopically enriched, Au-backed ^{173}Yb target; GAMMASPHERE array (92 Compton-suppressed HPGE detectors); measured Eγ, Iγ, $\gamma\gamma$ coin, γ-(Mo fragments) coin.

^{93}Zr Levels

E(level)[†]	J$^\pi$[‡]	Comments
0.0[&]	5/2$^+$	
949.8[&] *8*	(9/2$^+$)	
1654.7[@&] *11*	(13/2$^+$)	
2373.9[a] *11*	(11/2$^-$)	
2485.1[a] *12*	(15/2$^-$)	
2600.5 *14*		
2773.7 *11*	(13/2$^+$)	
2988.6[&] *11*	(17/2$^+$)	J$^\pi$: (15/2$^+$,17/2$^+$) In Adopted Levels.
3263.5[&] *14*	(21/2$^+$)	J$^\pi$: (17/2$^+$,21/2$^+$) In Adopted Levels.
3329.2 *15*		
3655.0 *15*		
4301.9[#] *17*		

[†] From least-squares fit to Eγ, assigning 0.8 keV uncertainty (the maximum uncertainty specified by the authors) to all Eγ data.
[‡] Authors′ suggested values.
[#] Not included In Adopted Levels, Gammas where a 647γ, shown deexciting this level here, lies much higher In the γ cascade and deexcites a 7294-keV level instead.
[@] In Adopted Levels, E=2285 for this level, corresponding to the reverse order for the 705γ and 1334γ cascade. In this reaction, these transitions have comparable Iγ but, In a ^{176}Yb(^{28}Si,Xγ), ^{176}Yb(^{31}P,Xγ) study (2005Pa48), the 1334γ is clearly the stronger.
[&] Band(A): π=+ ν 2d$_{5/2}$⊗(^{92}Zr or ^{94}Zr). Possible π=+ states resulting from weak coupling of d$_{5/2}$ valence neutron to π=+ states In ^{92}Zr or ^{94}Zr core (2002Fo03).
[a] Band(B): π=− ν 2d$_{5/2}$⊗(^{92}Zr or ^{94}Zr). Possible π=− states resulting from weak coupling of d$_{5/2}$ valence neutron to π=− states In ^{92}Zr or ^{94}Zr core (2002Fo03).

γ(^{93}Zr)

E$_\gamma$[†]	I$_\gamma$	E$_i$(level)	J$_i^\pi$	E$_f$	J$_f^\pi$	Mult.	Comments
65.6	25 *10*	3329.2		3263.5	(21/2$^+$)	D	I$_{(\gamma+ce)}$: ≤40 *8* from intensity balance At 3264 level, assuming negligible internal conversion for 392γ and 275γ. Mult.: α(exp)≤0.6 *7* (from I(γ+ce) and Iγ) rules out E2 or higher multipolarity (α(E2)=5.11 for 65.6γ, α(M1)=0.67).
111.2	36 *7*	2485.1	(15/2$^-$)	2373.9	(11/2$^-$)		
115.4	16 *5*	2600.5		2485.1	(15/2$^-$)		
214.8	4.1 *5*	2988.6	(17/2$^+$)	2773.7	(13/2$^+$)		
274.9	53 *7*	3263.5	(21/2$^+$)	2988.6	(17/2$^+$)		
325.7	37 *6*	3655.0		3329.2			
391.6	12.6 *30*	3655.0		3263.5	(21/2$^+$)		
503.4	20 *4*	2988.6	(17/2$^+$)	2485.1	(15/2$^-$)		
646.9	6.0 *5*	4301.9		3655.0			placed differently In Adopted Levels, Gammas; see comment on 4302 level.
705.0	19 *5*	1654.7	(13/2$^+$)	949.8	(9/2$^+$)		

Continued on next page (footnotes at end of table)

^{173}Yb(^{24}Mg,Fγ) 2002Fo03 (continued)

$\gamma(^{93}Zr)$ (continued)

E_γ [†]	I_γ	E_i(level)	J_i^π	E_f	J_f^π
949.8	100	949.8	$(9/2^+)$	0.0	$5/2^+$
1333.9	15.5 *30*	2988.6	$(17/2^+)$	1654.7	$(13/2^+)$
1424.1	38 *5*	2373.9	$(11/2^-)$	949.8	$(9/2^+)$
1823.8	5.4 *10*	2773.7	$(13/2^+)$	949.8	$(9/2^+)$

[†] Uncertainty ranges from 0.2 to 0.4 keV for strong transitions and from 0.6 to 0.8 keV for the weakest ones.

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Level Scheme

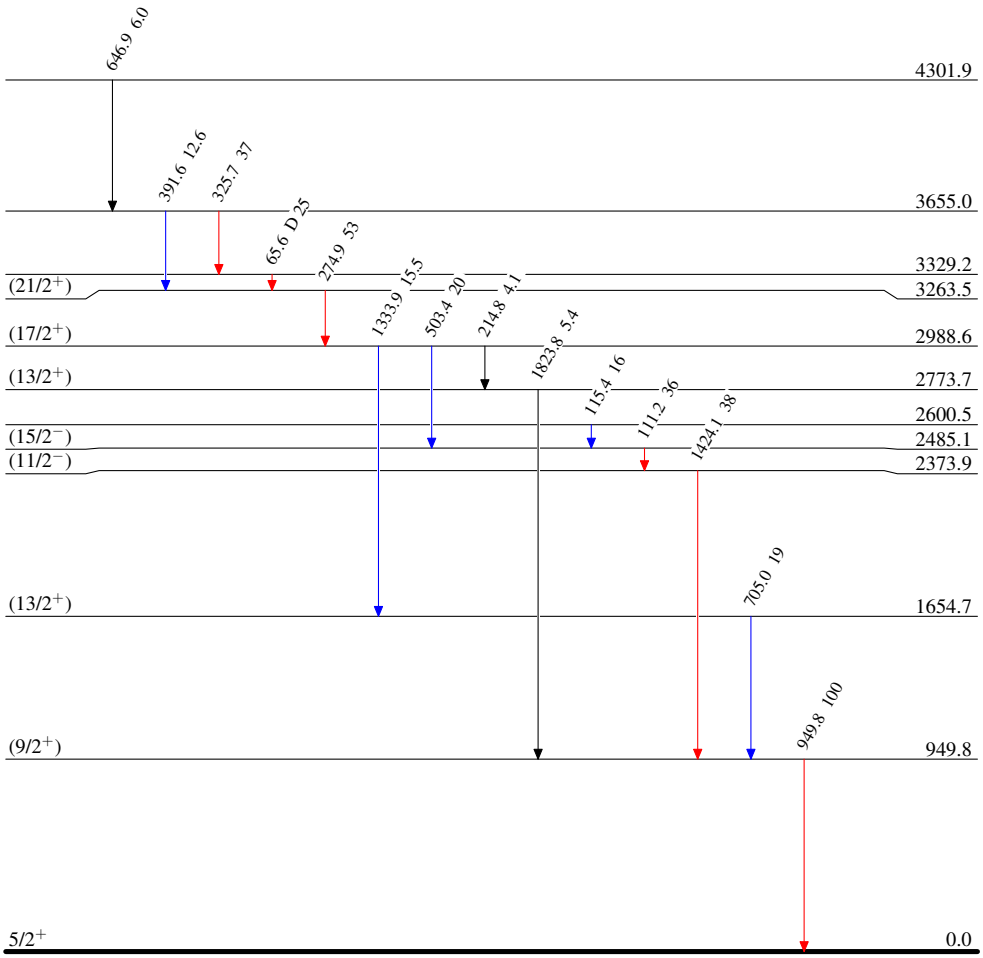
Intensities: Relative I_γ

Legend

$I_\gamma < 2\% \times I_\gamma^{max}$

$I_\gamma < 10\% \times I_\gamma^{max}$

$I_\gamma > 10\% \times I_\gamma^{max}$



$^{93}_{40}Zr_{53}$

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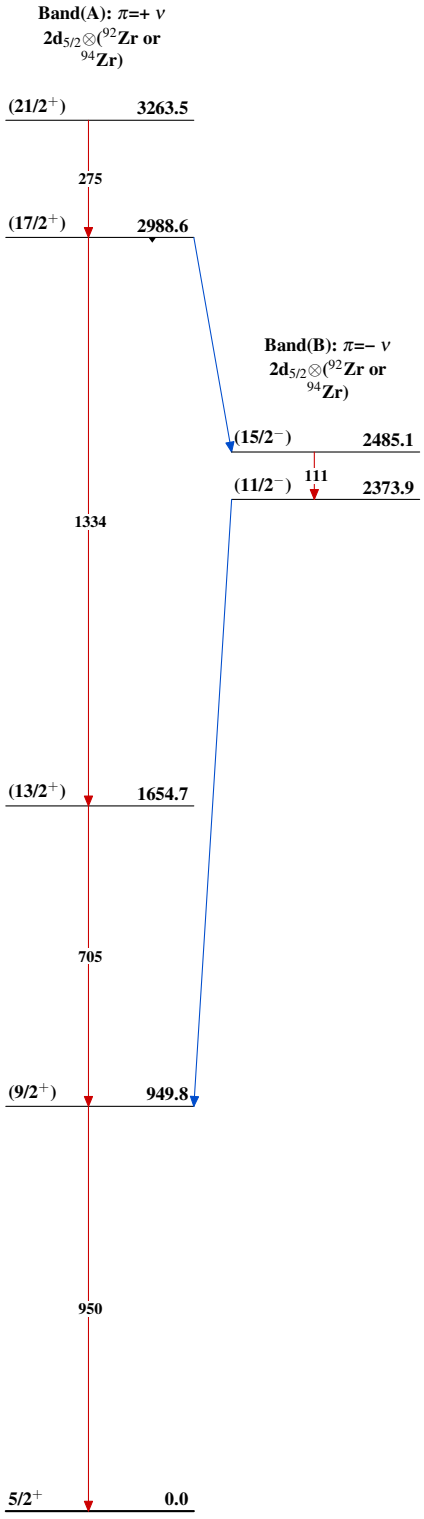

$^{93}_{40}Zr_{53}$