

⁹⁶Zr(¹¹B,3n γ) 2004Va01

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Jean Blachot	NDS 108,2035 (2007)	30-Mar-2007

E=38 MeV; Measured E γ , I γ , $\gamma\gamma$, $\gamma\gamma(\theta)$ (DCO), $\gamma\gamma(t)$ with pulsed beam using a suppressed Ge detector array. A second experiment was performed with GAMMASPHERE array at 40 MeV.

¹⁰⁴Rh Levels

E(level) [†]	J $^{\pi}$	T _{1/2}	Comments
0.0 [‡]	1+ [‡]		
51.4 [‡]	2- [‡]		
129.0 [‡]	5+ [‡]		Additional information 1.
175.0 ⁹	6+		
344.0 ⁹	6-	42 ns	g=0.33 2
393.0 ¹²	7-		
454.0 ¹²	8-		
551.2 ^{@ 14}	9-		
908.9 ^{# 14}	10-		
1237.2 ^{@ 14}	11-		
1295.8 ^{& 14}	10-		
1650.2 ^{a 14}	11-		
1704.9 ^{# 15}	12-		
2039.9 ^{& 14}	12-		
2180.0 ^{@ 15}	13-		
2439.2 ^{a 15}	13-		
2708.3 ^{# 15}	14-		
2903.1 ^{& 15}	14-		
3298.6 ^{@ 16}	15-		
3388.9 ^{a 15}	15-		
3869.3 ^{# 17}	16-		
3944.3 ^{& 16}	16-		
4473.6 ^{a 16}	17-		
4474.9 ^{@ 17}	17-		

[†] From least-squares fit to E γ 's (by compilers), assuming 1 keV uncertainty for each E γ .

[‡] From Adopted Levels.

Band(A): Yrast $\pi g_{9/2} \otimes \nu h_{11/2}$, $\alpha=0$.

@ Band(a): Yrast $\pi g_{9/2} \otimes \nu h_{11/2}$, $\alpha=1$.

& Band(B): Chiral partner of $\pi g_{9/2} \otimes \nu h_{11/2}$, $\alpha=0$.

^a Band(b): Chiral partner of $\pi g_{9/2} \otimes \nu h_{11/2}$, $\alpha=1$.

$\gamma(^{104}\text{Rh})$

E γ	E _i (level)	J _i $^{\pi}$	E _f	J _f $^{\pi}$
46.3 [†]	175.0	6+	129.0	5+
49 [‡]	393.0	7-	344.0	6-
51.4 [†]	51.4	2-	0.0	1+
61	454.0	8-	393.0	7-

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$^{96}\text{Zr}(^{11}\text{B},3\text{n}\gamma)$ 2004Va01 (continued) $\gamma(^{104}\text{Rh})$ (continued)

E_γ	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Mult.	Comments
77.5 [†]	129.0	5 ⁺	51.4	2 ⁻		
110 [#]	454.0	8 ⁻	344.0	6 ⁻		
158 [‡]	551.2	9 ⁻	393.0	7 ⁻		
169 [‡]	344.0	6 ⁻	175.0	6 ⁺		
215 [‡]	344.0	6 ⁻	129.0	5 ⁺		
328 [‡]	1237.2	11 ⁻	908.9	10 ⁻		
354	1650.2	11 ⁻	1295.8	10 ⁻		
357 [‡]	908.9	10 ⁻	551.2	9 ⁻		
389 [#]	2039.9	12 ⁻	1650.2	11 ⁻		
399 [#]	2439.2	13 ⁻	2039.9	12 ⁻		
464 [#]	2903.1	14 ⁻	2439.2	13 ⁻		
468 [‡]	1704.9	12 ⁻	1237.2	11 ⁻		
475 [#]	2180.0	13 ⁻	1704.9	12 ⁻		
486	3388.9	15 ⁻	2903.1	14 ⁻		
516 [#]	908.9	10 ⁻	393.0	7 ⁻		
528 [#]	2708.3	14 ⁻	2180.0	13 ⁻		
530	4473.6	17 ⁻	3944.3	16 ⁻		
556	3944.3	16 ⁻	3388.9	15 ⁻		
571	3869.3	16 ⁻	3298.6	15 ⁻		
590	3298.6	15 ⁻	2708.3	14 ⁻		
606	4474.9	17 ⁻	3869.3	16 ⁻		
645	3944.3	16 ⁻	3298.6	15 ⁻		
680	3388.9	15 ⁻	2708.3	14 ⁻		
686 [#]	1237.2	11 ⁻	551.2	9 ⁻		
723	2903.1	14 ⁻	2180.0	13 ⁻		
734 [#]	2439.2	13 ⁻	1704.9	12 ⁻	M1+E2	Mult.: $\Delta J=1$ from $\gamma\gamma(\theta)$.
741 [#]	1650.2	11 ⁻	908.9	10 ⁻	M1+E2	Mult.: from $\gamma(\text{pin pol})$ and $\gamma\gamma(\theta)$, $\Delta J=1$.
745	1295.8	10 ⁻	551.2	9 ⁻	M1+E2	Mult.: $\Delta J=1$ from $\gamma\gamma(\theta)$.
745 [#]	2039.9	12 ⁻	1295.8	10 ⁻		
789	2439.2	13 ⁻	1650.2	11 ⁻		
796 [#]	1704.9	12 ⁻	908.9	10 ⁻		
802	2039.9	12 ⁻	1237.2	11 ⁻		
863	2903.1	14 ⁻	2039.9	12 ⁻		
903	1295.8	10 ⁻	393.0	7 ⁻		
943 [#]	2180.0	13 ⁻	1237.2	11 ⁻		
949	3388.9	15 ⁻	2439.2	13 ⁻		
1004 [#]	2708.3	14 ⁻	1704.9	12 ⁻		
1041	3944.3	16 ⁻	2903.1	14 ⁻		
1084	4473.6	17 ⁻	3388.9	15 ⁻		
1099	1650.2	11 ⁻	551.2	9 ⁻		
1118	3298.6	15 ⁻	2180.0	13 ⁻		
1131	2039.9	12 ⁻	908.9	10 ⁻		
1161	3869.3	16 ⁻	2708.3	14 ⁻		
1175	4473.6	17 ⁻	3298.6	15 ⁻		
1176	4474.9	17 ⁻	3298.6	15 ⁻		
1198	2903.1	14 ⁻	1704.9	12 ⁻		
1202	2439.2	13 ⁻	1237.2	11 ⁻		
1210	3388.9	15 ⁻	2180.0	13 ⁻		
1237	3944.3	16 ⁻	2708.3	14 ⁻		

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$^{96}\text{Zr}(^{11}\text{B},3n\gamma)$ **2004Va01** (continued)

$\gamma(^{104}\text{Rh})$ (continued)

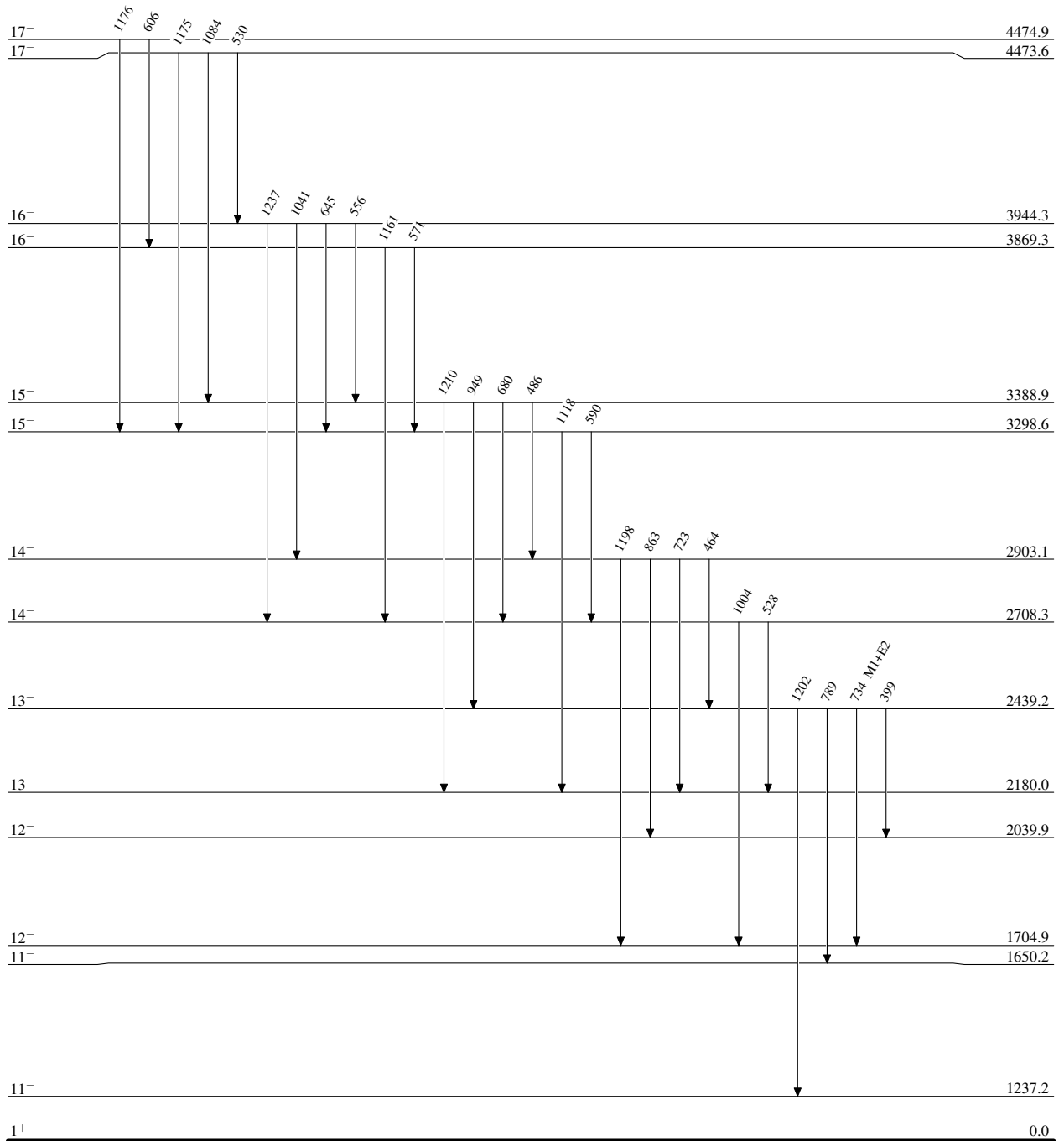
† Rounded off value from Adopted Levels.

‡ Strong gamma intensity.

Moderate gamma intensity.

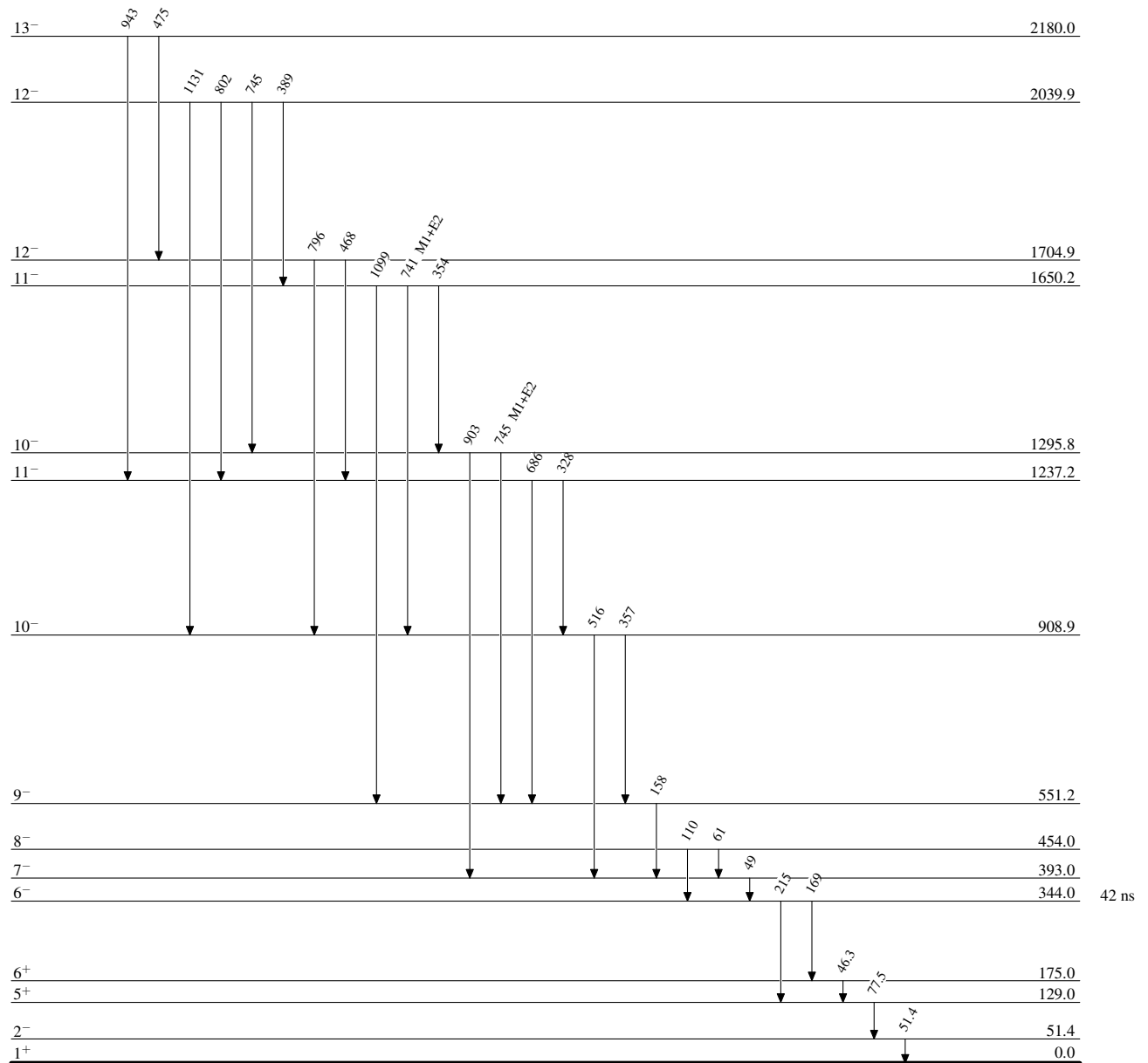
$^{96}\text{Zr}(^{11}\text{B}, 3\text{n}\gamma)$ 2004Va01

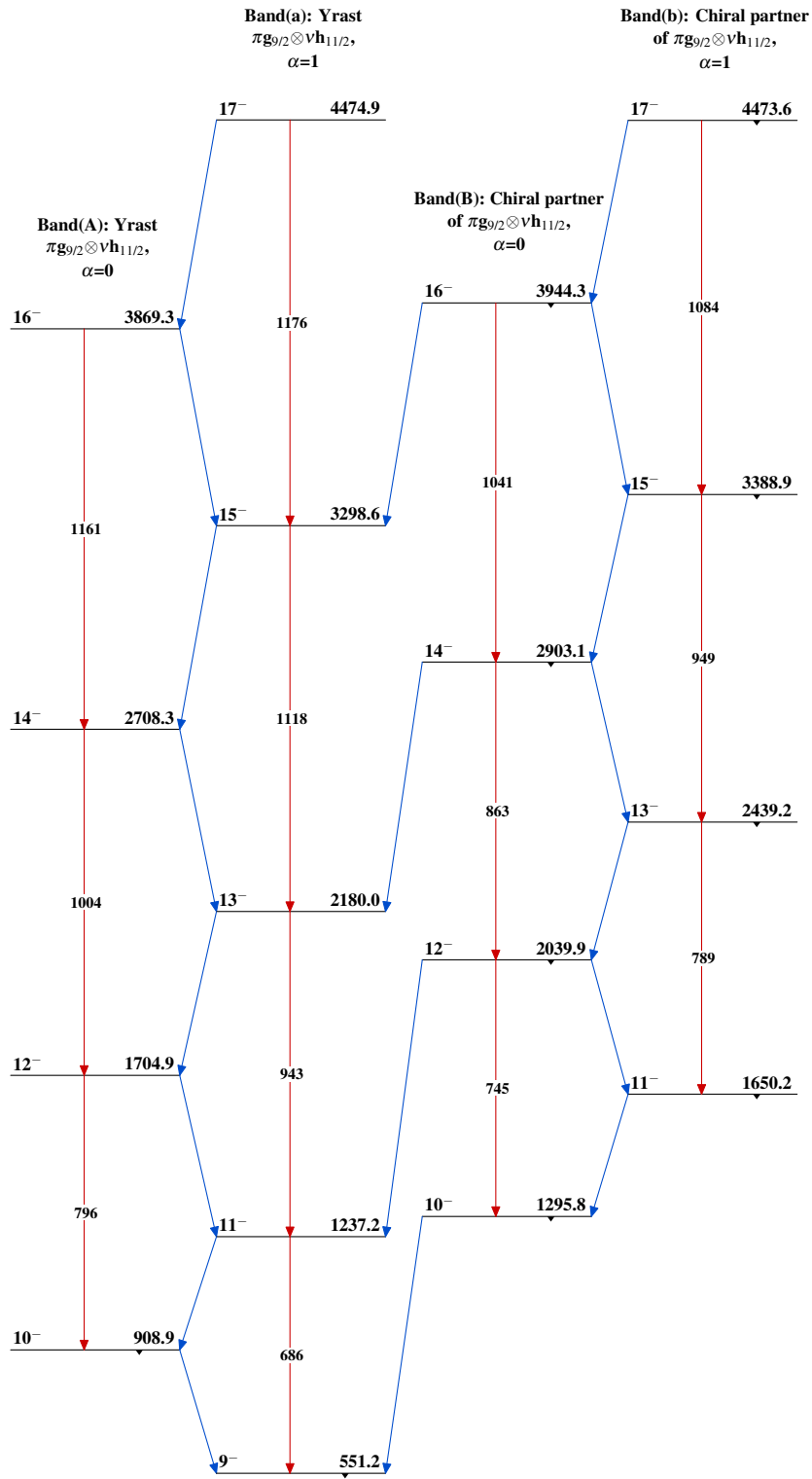
Level Scheme

 $^{104}_{45}\text{Rh}_{59}$

$^{96}\text{Zr}(^{11}\text{B},3n\gamma)$ 2004Va01

Level Scheme (continued)

 $^{104}_{45}\text{Rh}_{59}$

$^{96}\text{Zr}(^{11}\text{B}, 3n\gamma)$ 2004Va01 $^{104}_{45}\text{Rh}_{59}$