

$^{65}\text{Cu}(^{36}\text{S},\alpha 2n\gamma)$ 2000Gh01

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	S. K. Basu, G. Mukherjee, A. A. Sonzogni		NDS 111, 2555 (2010)	30-Jun-2009

E=142 MeV. Measured $E\gamma$, $\gamma\gamma$, $I\gamma$, $\gamma\gamma(\theta)(\text{DCO})$ using the GAMMASPHERE array of 36 HPGe detectors.

 ^{95}Tc Levels

E(level) [†]	J ^π [#]	E(level) [†]	J ^π [#]	E(level) [†]	J ^π [#]	E(level) [†]	J ^π [#]
0 [@]	9/2 ⁺	2547.6 [@] 5	21/2 ⁺	5601.8 [@] 13	(31/2 ⁺)	7921.6 ^b 13	(35/2 ⁻)
39.1 ^a 7	1/2 ⁻	2843.7 ^{&} 6	(23/2 ⁺)	5647.4 10	(29/2 ⁺)	8299.6 13	(35/2 ⁻)
668.1 ^a 5	5/2 ⁻	3025.1 ^a 6	21/2 ⁻	5731.8 13	(31/2 ⁺)	8540.7 ^b 14	(37/2 ⁻)
882.3 [@] 3	13/2 ⁺	3517.7 [@] 6	25/2 ⁺	5832.5 ^a 9	(33/2 ⁻)	8974.1 17	(33/2 ⁺)
956.6 ^{&} 3	11/2 ⁺	3823.2 ^a 7	(25/2 ⁻)	5907.9 13	(33/2 ⁺)	9151.3 17	(35/2 ⁺)
1215.1 ^a 3	9/2 ⁻	3920.8 [@] 8	(29/2 ⁺)	6125.5 10		9260.8 ^b 15	(41/2 ⁻)
1515.6 [@] 4	17/2 ⁺	4112.9 9		6357.6 10		10151.4 17	(37/2 ⁺)
1549.6 ^{&} 3	15/2 ⁺	4127.4 [‡] 3	(29/2 ⁻)	6504.6 11		10660.9 ^b 15	(45/2 ⁻)
1702.1 ^a 4	13/2 ⁻	4787.3 9		6622.0 14	(35/2 ⁺)	12079.9 ^b 16	(47/2 ⁻)
2183.6 ^{&} 4	19/2 ⁺	4972.3 ^a 8	(29/2 ⁻)	6671.0 [@] 13	(33/2 ⁺)	14461.9 ^b 19	
2213.1 ^a 4	17/2 ⁻	5370.4 10		7318.6 10	(35/2 ⁻)		

[†] From least-squares fit to $E\gamma$'s.

[‡] From Adopted Levels, Gammas.

[#] Spin-parity assignments, based on intensity ratio $R=I\gamma(\text{backward})/I\gamma(90^\circ)$; typical $R\approx 2$ for E2 and ≈ 1.5 for M1, taken by 2000Gh01.

[@] Band(A): sequence based on g.s., 9/2⁺.

[&] Band(a): sequence based on 11/2⁺.

^a Band(B): sequence based on 1/2⁻.

^b Band(C): sequence based on (35/2⁻).

 $\gamma(^{95}\text{Tc})$

E_γ [‡]	I_γ [†]	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Mult. [#]	Comments
176.1 4	6.9 9	5907.9	(33/2 ⁺)	5731.8	(31/2 ⁺)		
177.2 4	8.1 10	9151.3	(35/2 ⁺)	8974.1	(33/2 ⁺)		
192.1 4	5.2 8	4112.9		3920.8	(29/2 ⁺)		
293.0 4	3.1 6	6125.5		5832.5	(33/2 ⁻)		
305.61 24	10 1	4127.4	(29/2 ⁻)	3823.2	(25/2 ⁻)		R=2.1 3. E_γ : from Adopted Levels, Gammas.
364.0 4	35 4	2547.6	21/2 ⁺	2183.6	19/2 ⁺		R=1.5 2.
403.1 4	63 6	3920.8	(29/2 ⁺)	3517.7	25/2 ⁺		R=1.9 3.
487.0 4	18 2	1702.1	13/2 ⁻	1215.1	9/2 ⁻	(E2)	R=1.9 3.
511.0 4	26 3	2213.1	17/2 ⁻	1702.1	13/2 ⁻	(E2)	R=2.0 2.
525.1 4	5.0 10	6357.6		5832.5	(33/2 ⁻)		
547.0 4	15 2	1215.1	9/2 ⁻	668.1	5/2 ⁻	(E2)	R=2.1 3.
583.1 4	6.0 9	5370.4		4787.3			
593.0 4	42 4	1549.6	15/2 ⁺	956.6	11/2 ⁺	(E2)	R=1.8 2.
619.1 4	6.0 9	8540.7	(37/2 ⁻)	7921.6	(35/2 ⁻)		
629.0 4	15 2	668.1	5/2 ⁻	39.1	1/2 ⁻	(E2)	R=1.9 3.
633.3 4	65 6	1515.6	17/2 ⁺	882.3	13/2 ⁺	(E2)	R=1.9 2.
634.0 4	60 6	2183.6	19/2 ⁺	1549.6	15/2 ⁺	(E2)	R=1.9 2.

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$^{65}\text{Cu}(^{36}\text{S},\alpha 2n\gamma)$ **2000Gh01 (continued)** $\gamma(^{95}\text{Tc})$ (continued)

E_γ ‡	I_γ †	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Mult. $^\#$	Comments
657.1 4	8.0 11	4787.3		4127.4	(29/2 ⁻)		
660.1 4	40 4	2843.7	(23/2 ⁺)	2183.6	19/2 ⁺		
663.5 4	10 1	2213.1	17/2 ⁻	1549.6	15/2 ⁺		R=1.3 2.
667.3 4	35 4	1549.6	15/2 ⁺	882.3	13/2 ⁺		R=1.6 2.
668.0 4	34 3	2183.6	19/2 ⁺	1515.6	17/2 ⁺		R=1.6 2.
714.1 4	6.1 8	6622.0	(35/2 ⁺)	5907.9	(33/2 ⁺)		
720.1 4	6.0 9	9260.8	(41/2 ⁻)	8540.7	(37/2 ⁻)		
745.5 4	10 1	1702.1	13/2 ⁻	956.6	11/2 ⁺		R=1.3 2.
798.1 4	33 3	3823.2	(25/2 ⁻)	3025.1	21/2 ⁻	(E2)	R=1.8 2.
812.0 4	36 4	3025.1	21/2 ⁻	2213.1	17/2 ⁻	(E2)	R=2.0 3.
860.1 4	4.2 8	5647.4	(29/2 ⁺)	4787.3			
860.2 4	16 2	5832.5	(33/2 ⁻)	4972.3	(29/2 ⁻)		R=2.1 2.
882.3 4	100	882.3	13/2 ⁺	0	9/2 ⁺	(E2)	R=2.0 2.
956.6 4	49 5	956.6	11/2 ⁺	0	9/2 ⁺		R=1.5 2.
970.1 4	63 6	3517.7	25/2 ⁺	2547.6	21/2 ⁺	(E2)	R=2.0 3.
1000.1 4	6.1 11	10151.4	(37/2 ⁺)	9151.3	(35/2 ⁺)		
1032.0 4	30 3	2547.6	21/2 ⁺	1515.6	17/2 ⁺	(E2)	R=1.9 3.
1069.2 4	12 1	6671.0	(33/2 ⁺)	5601.8	(31/2 ⁺)		R=1.6 2.
1134.2 4	3.1 11	6504.6		5370.4			
1149.1 4	22 2	4972.3	(29/2 ⁻)	3823.2	(25/2 ⁻)		R=1.9 3.
1215.1 4	4.1 6	1215.1	9/2 ⁻	0	9/2 ⁺		R=2.1 3.
1400.1 4	5.8 9	10660.9	(45/2 ⁻)	9260.8	(41/2 ⁻)		
1419.0 4	5.8 11	12079.9	(47/2 ⁻)	10660.9	(45/2 ⁻)		
1486.1 4	4.1 9	7318.6	(35/2 ⁻)	5832.5	(33/2 ⁻)		
1681 1	10 1	5601.8	(31/2 ⁺)	3920.8	(29/2 ⁺)		R=1.5 2.
1811 1	6.2 9	5731.8	(31/2 ⁺)	3920.8	(29/2 ⁺)		R=1.5 3.
2089 1	8.0 11	7921.6	(35/2 ⁻)	5832.5	(33/2 ⁻)		R=1.6 3.
2303 1	8.1 12	8974.1	(33/2 ⁺)	6671.0	(33/2 ⁺)		R=1.6 2.
2382 1	5.0 12	14461.9		12079.9	(47/2 ⁻)		
2467 1	5.0 8	8299.6	(35/2 ⁻)	5832.5	(33/2 ⁻)		

† Uncertainties in relative intensities are taken as 10%, as suggested by 2000Gh01, unless otherwise stated.

‡ $\Delta(E_\gamma)=0.4$ for $E_\gamma<1500$ keV and 1.0 for $E_\gamma>1500$ keV as suggested by 2000Gh01.

$^\#$ From intensity ratio R.

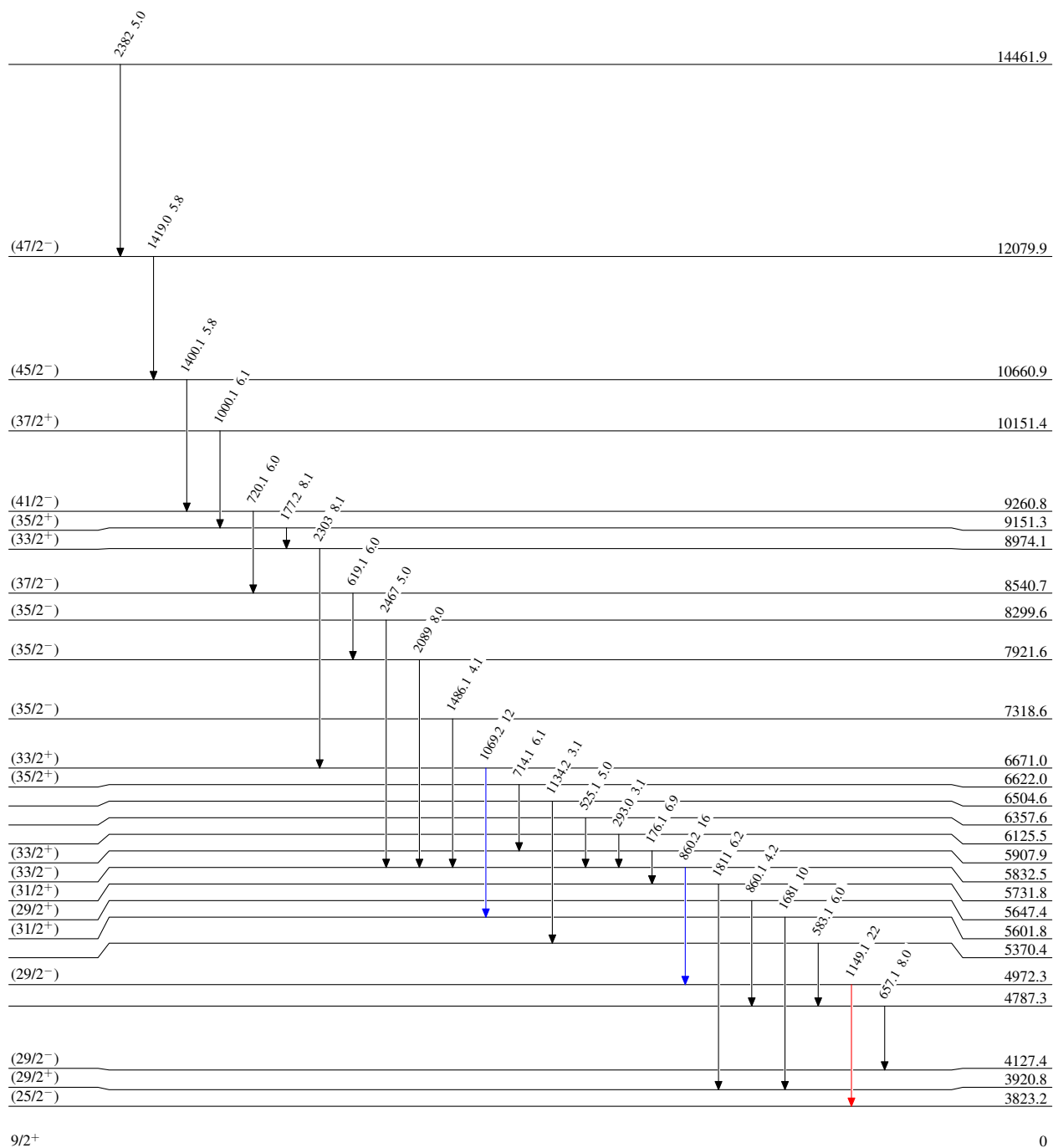
$^{65}\text{Cu}(^{36}\text{S}, \alpha 2n\gamma)$ 2000Gh01

Level Scheme

Intensities: Relative I_γ

Legend

- $\longrightarrow$ $I_\gamma < 2\% \times I_\gamma^{\max}$
 $\longrightarrow$ $I_\gamma < 10\% \times I_\gamma^{\max}$
 $\longrightarrow$ $I_\gamma > 10\% \times I_\gamma^{\max}$



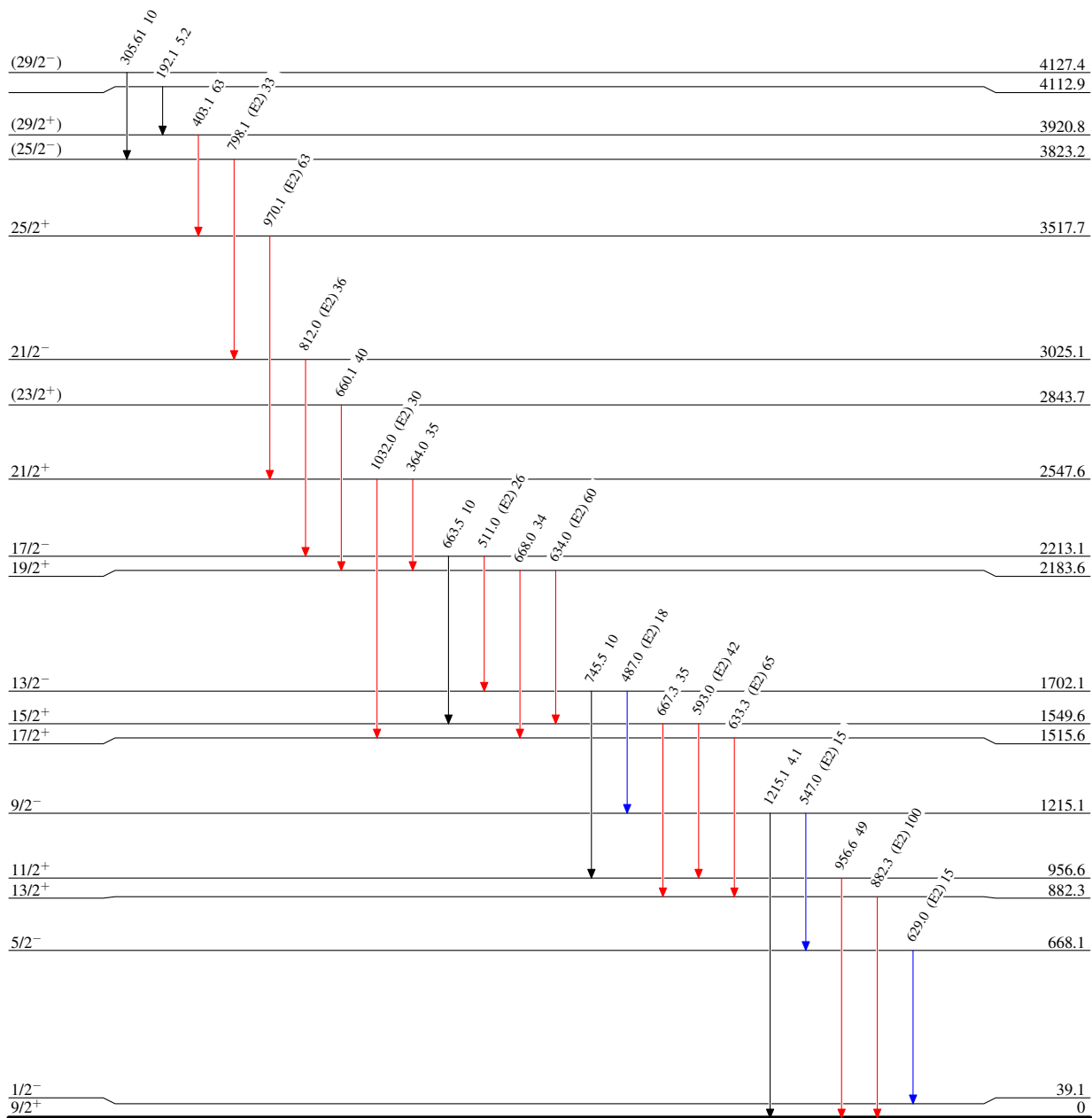
$^{65}\text{Cu}(^{36}\text{S},\alpha 2n\gamma)$ 2000Gh01

Level Scheme (continued)

Intensities: Relative I_γ

Legend

- $\longrightarrow$ $I_\gamma < 2\% \times I_\gamma^{\max}$
 $\longrightarrow$ $I_\gamma < 10\% \times I_\gamma^{\max}$
 $\longrightarrow$ $I_\gamma > 10\% \times I_\gamma^{\max}$



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