^{58}Fe(n,n′γ) 1983Ko39,1985Ko42

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Caroline D. Nesaraja, Scott D. Geraedts and Balraj Singh	NDS 111, 897 (2010)	12-Jan-2010

Fast reactor neutrons.
1983Ko39: Measured Eγ, Iγ, γ(t).
Additional information 1.
1985Ko42: Measured γ, γ(θ).

^{58}Fe Levels

E(level)	Jπ[#]	$T_{1/2}$[†]	γ-intensity balance[‡]	Comments
0.0	0^+			
810.8	2^+		68 *6*	
1674.7	2^+		16.3 *6*	
2076.6	4^+	0.24 ps *4*	3.8 *3*	
2133.9	3^+		4.9 *3*	
2257.5	0^+		2.3 *2*	
2600.4	4^+	>0.28 ps	1.8 *2*	
2782.2	1^+	0.20 ps *+9−5*	1.3 *2*	
2876.7	2^+	0.097 ps *+21−14*	2.3 *3*	
3083.5	2^+	0.033 ps *+12−8*	1.7 *2*	
3233.5	2^+		1.2 *2*	
3243.0	0^+		0.40 *5*	
3448.7	(4^+)		0.6 *1*	
3537.3	1^+		0.9 *2*	
3597.2	6^+	0.11 ps *+8−4*	0.15 *5*	
3629.6	2^+	0.015 ps *3*	0.72 *6*	
3785.6	(5^-)		0.30 *5*	
3860.4	3^-	0.090 ps *+35−21*	0.58 *3*	
3879.7	1^+		0.27 *4*	
3886.5	6^+		0.07 *2*	
3901.7	$(3)^+$	0.031 ps *7*	0.44 *6*	
4010.8	2^+		0.32 *4*	
4089.0	4^+	0.06 ps *+8−3*	0.20 *4*	
4215.2	(5)		0.20 *2*	
4312.8	2^+		0.25 *4*	
4444.3	1^+		0.12 *3*	
5222.2	1,2	<0.38 ps	0.14 *3*	$T_{1/2}$: 0.12 ps *+16−15* in 1983Ko39.

[†] From DSAM (1983Ko39).
[‡] Difference in intensities of depopulating and populating γ's for a given level (1983Ko39).
[#] From 'Adopted Levels'. Supporting assignments from this reaction based on analysis of S in terms of Hauser-Feshbach-Moldauer theory (1985Ko42) agree with these values.

γ(^{58}Fe)

E_i(level)	J_i^π	E_γ	I_γ[‡]	E_f	J_f^π	Mult.	δ[†]
810.8	2^+	810	100	0.0	0^+		
1674.7	2^+	863	51	810.8	2^+	D+Q	−0.50 *5*
		1674	49	0.0	0^+		
2076.6	4^+	1265.8	100	810.8	2^+		
2133.9	3^+	1323	78	810.8	2^+	D+Q	−0.40 *5*
2600.4	4^+	524	41	2076.6	4^+	D+Q	−0.15 *5*

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^{58}Fe(n,n′γ) 1983Ko39,1985Ko42 (continued)

γ(^{58}Fe) (continued)

E_i(level)	J_i^π	E_γ	I_γ‡	E_f	J_f^π	Mult.	δ†
2600.4	4^+	1789.7	31	810.8	2^+		
2782.2	1^+	1971.5	100	810.8	2^+		
2876.7	2^+	2065.6	100	810.8	2^+	D+Q	−0.13 *3*
3083.5	2^+	2272.5	100	810.8	2^+	D+Q	+0.05 *1*
3597.2	6^+	1520.5	100	2076.6	4^+		
3629.6	2^+	2818.4		810.8	2^+		
3860.4	3^-	2186.0		1674.7	2^+		
3901.7	$(3)^+$	1767.8		2133.9	3^+		
4089.0	4^+	1488.6		2600.4	4^+		
5222.2	1,2	2138.7		3083.5	2^+		

† From γ(θ) (1985Ko42).
‡ Percent branching from each level (1985Ko42).

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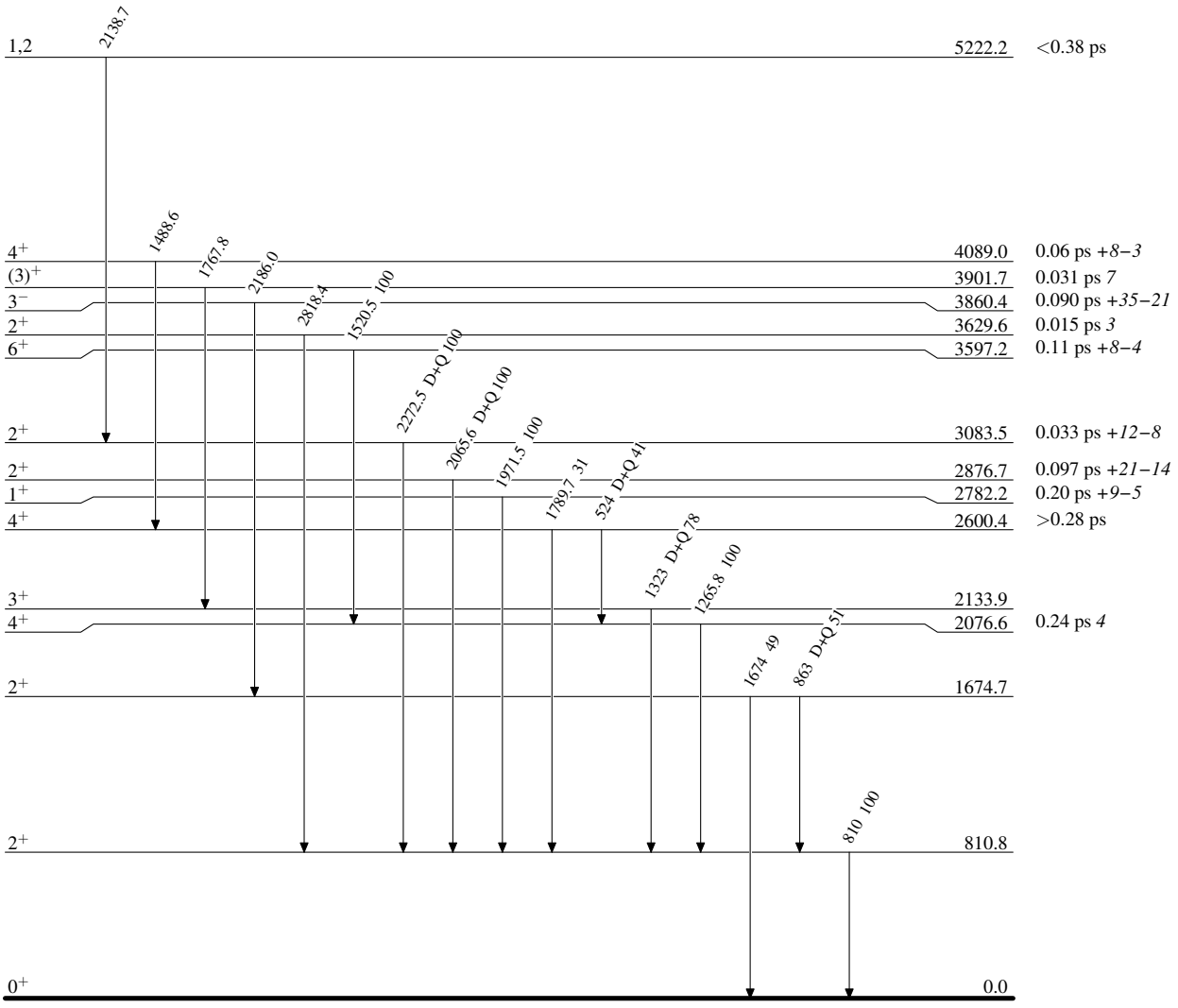
Level Scheme

Intensities: % photon branching from each level



$^{58}_{26}Fe_{32}$