^{92}Mo(^{88}Sr,αpγ) 2019Gi11

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Jin Wu	NDS 206,1 (2025)	29-Oct-2024

2019Gi11: The excited states of ^{175}Ir were produced at E(^{88}Sr)=381 MeV from the K-130 cyclotron at the Accelerator Laboratory of the University of Jayvaskyla, using a target consisting of 600 μg/cm^2 self-supporting ^{92}Mo. Recoils were separated using the RITU gas filled separator and implanted into the DSSD of the GREAT spectrometer. Measured delayed Eγ, Iγ, γ(t) using a segmented planar HPGe detector and prompt Eγ, Iγ, $\gamma\gamma$ using the JUROGAM II array consisting of 23 EUROGAM clover detectors and 15 EUROGAM phase one detectors.

^{175}Ir Levels

E(level)[†‡]	J$^\pi$[†]	T$_{1/2}$	Comments
0.0	1/2$^+$		
26.1 *4*	(3/2$^+$)		
71.3 *5*	(5/2$^-$)	6.58 μs *15*	T$_{1/2}$: from implant-45.2γ(t) (2019Gi11).
120.3 *22*	(9/2$^-$)		
267.3 *11*	(7/2$^-$)		
350.3 *20*	(13/2$^-$)		
493.3 *15*	(11/2$^-$)		
722.3 *21*	(17/2$^-$)		
731.3 *18*	(13/2$^+$)		
838.3 *18*	(15/2$^-$)		
883.3 *20*	(17/2$^+$)		
1132.3 *22*	(21/2$^+$)		
1185.3 *23*	(21/2$^-$)		
1460.3 *25*	(25/2$^+$)		
1700.3 *25*	(25/2$^-$)		
1856.3 *26*	(29/2$^+$)		
2245.3 *27*	(29/2$^-$)		
2314.3 *28*	(33/2$^+$)		

[†] As given in 2019Gi11. Authors state that statistics were lower than prior in-beam studies (1991Dr06), thus while their results are in agreement, they were not able to improve on the high-spin portion of the level scheme.
[‡] From a least-squares fit to Eγ's, assuming ΔE = 1.0 keV for the integer values and ΔE=0.5 keV for one-decimal-digit values.

γ(^{175}Ir)

E$_\gamma$[†]	I$_\gamma$	E$_i$(level)	J$_i^\pi$	E$_f$	J$_f^\pi$	Mult.	α[‡]	Comments
26.1 *4*	100	26.1	(3/2$^+$)	0.0	1/2$^+$	M1	55.5 *27*	α(exp)=76 *14* (2019Gi11) α(L)=42.8 *21*; α(M)=9.9 *5*; α(N)=2.43 *12*; α(O)=0.429 *21*; α(P)=0.0323 *16* Mult.: from α(tot)exp obtained from intensity balance.
45.2 *2*	100	71.3	(5/2$^-$)	26.1	(3/2$^+$)	E1	0.676 *13*	α(exp)=0.72 *7* (2019Gi11) α(L)=0.520 *10*; α(M)=0.1217 *23*; α(N)=0.0290 *5*; α(O)=0.00454 *8*; α(P)=0.0001725 *30* Mult.: from α(tot)exp obtained from intensity balance. α(exp): from weighted average of 0.65 *13*, 0.78 *17*, 0.72 *13*, and 0.74 *12* obtained from different combinations of $\gamma\gamma$ analysis (2019Gi11).
(49)		120.3	(9/2$^-$)	71.3	(5/2$^-$)			
152		883.3	(17/2$^+$)	731.3	(13/2$^+$)			
161		883.3	(17/2$^+$)	722.3	(17/2$^-$)			

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^{92}Mo(^{88}Sr,αpγ) 2019Gi11 (continued)

$\gamma(^{175}Ir)$ (continued)

E_γ †	E_i(level)	J_i^π	E_f	J_f^π	E_γ †	E_i(level)	J_i^π	E_f	J_f^π
196	267.3	$(7/2^-)$	71.3	$(5/2^-)$	372	722.3	$(17/2^-)$	350.3	$(13/2^-)$
226	493.3	$(11/2^-)$	267.3	$(7/2^-)$	381	731.3	$(13/2^+)$	350.3	$(13/2^-)$
230	350.3	$(13/2^-)$	120.3	$(9/2^-)$	396	1856.3	$(29/2^+)$	1460.3	$(25/2^+)$
238	731.3	$(13/2^+)$	493.3	$(11/2^-)$	458	2314.3	$(33/2^+)$	1856.3	$(29/2^+)$
249	1132.3	$(21/2^+)$	883.3	$(17/2^+)$	463	1185.3	$(21/2^-)$	722.3	$(17/2^-)$
328	1460.3	$(25/2^+)$	1132.3	$(21/2^+)$	515	1700.3	$(25/2^-)$	1185.3	$(21/2^-)$
345	838.3	$(15/2^-)$	493.3	$(11/2^-)$	545	2245.3	$(29/2^-)$	1700.3	$(25/2^-)$

† 2019Gi11 gives mainly rounded values, which they state are in good agreement with earlier results by 1991Dr06. The two additions to level scheme involve the 26.1γ and 45.2γ.

‡ Additional information 1.

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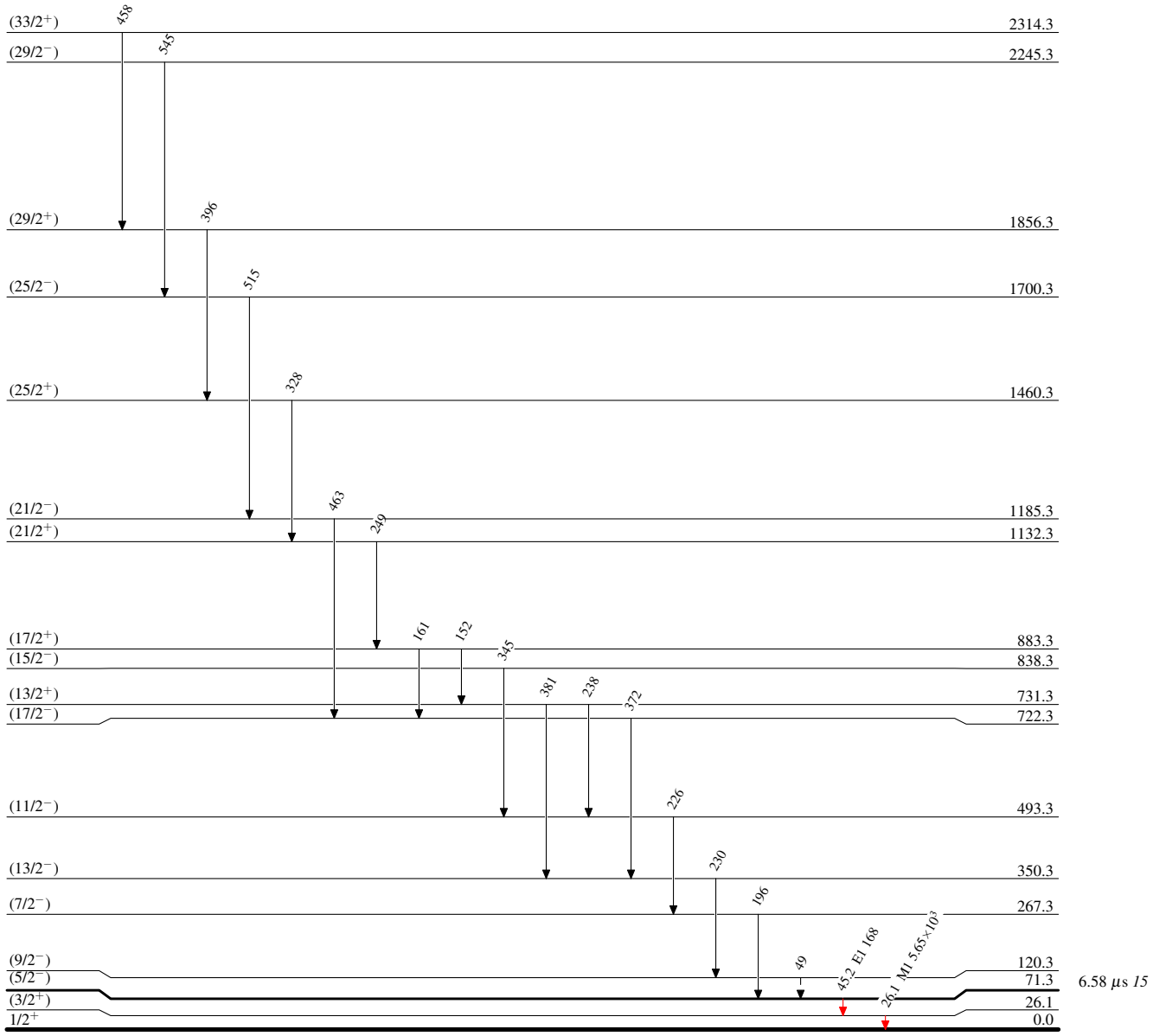
Level Scheme

Intensities: Relative $I_{(\gamma+ce)}$

Legend

$I_\gamma < 2\% \times I_\gamma^{max}$
$I_\gamma < 10\% \times I_\gamma^{max}$
$I_\gamma > 10\% \times I_\gamma^{max}$
γ Decay (Uncertain)



$^{175}_{77}Ir_{98}$