^{238}U(^{64}Ni,Xγ) E=400 MeV 2007Lu13

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Kazimierz Zuber, Balraj Singh	NDS 125, 1 (2015)	25-Jan-2015

2007Lu13: ^{61}Fe produced in ^{238}U(^{64}Ni,Xγ) reaction with beam energy of 400 MeV delivered by the LNL Tandem-ALPI accelerator. Fragments were detected with the PRISMA large acceptance magnetic spectrometer. Measured Eγ, Iγ, $\gamma\gamma$-coin. using CLARA array containing 22 Compton-suppressed Ge Clover detectors. Comparisons with large-scale shell-model calculations.

^{61}Fe Levels

E(level)	J$^\pi$[†]	$T_{1/2}$	Comments
0.0	(3/2$^-$)		J$^\pi$: from Adopted Levels.
206.5 *5*	5/2$^-$		
860.5[‡] *12*	9/2$^+$	238 ns *5*	$T_{1/2}$: from Adopted Levels.
958.9 *7*	(7/2$^-$)		
1648.7[‡] *12*	(13/2$^+$)		J$^\pi$: yrast population favors the 13/2$^+$, spin-parity assignments indicating configuration=$\nu g_{9/2}\otimes$(2$^+$ in ^{60}Fe).
2989.7[‡] *13*	(17/2$^+$)		Configuration=$\nu g_{9/2}\otimes$ (4$^+$ in ^{60}Fe).

[†] Assignments are based on systematics.
[‡] Band(A): 9/2[404] Band.

γ(^{61}Fe)

E$_\gamma$	I$_\gamma$	E$_i$(level)	J$_i^\pi$	E$_f$	J$_f^\pi$	Comments
206.5 *5*	68 *6*	206.5	5/2$^-$	0.0	(3/2$^-$)	
654		860.5	9/2$^+$	206.5	5/2$^-$	E$_\gamma$,Mult.: 654γ with mult=M2 reported in 1998Gr14 and Fig. 6 of 2007Lu13.
752.4 *4*	29 *5*	958.9	(7/2$^-$)	206.5	5/2$^-$	
788.2 *2*	100 *7*	1648.7	(13/2$^+$)	860.5	9/2$^+$	
1341.0 *5*	53 *7*	2989.7	(17/2$^+$)	1648.7	(13/2$^+$)	

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Level Scheme

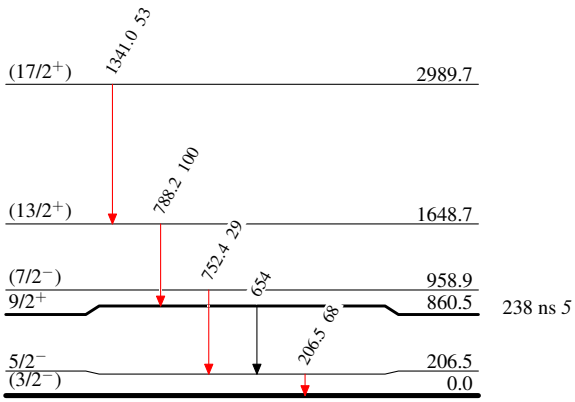
Intensities: Relative I_γ

Legend

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

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

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



$^{61}_{26}Fe_{35}$

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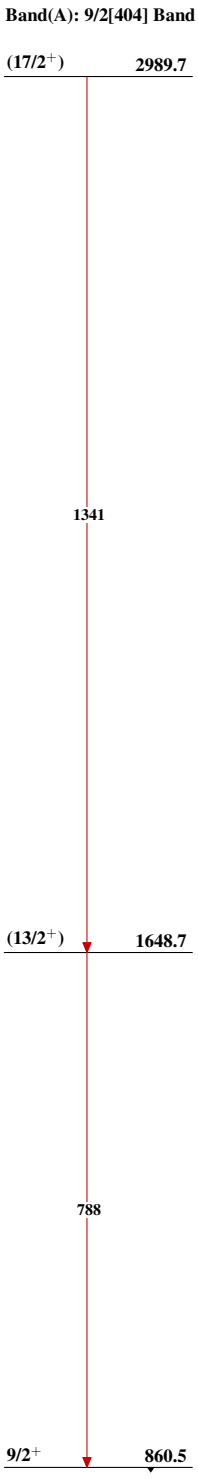

$^{61}_{26}Fe_{35}$