^{9}Be(^{238}U,Fγ) 2016Re03

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	H. Iimura, J. Katakura, S. Ohya	NDS 180, 1 (2022)	1-Oct-2021

E(^{238}U)=1.29 GeV on a 10 μm thick Be target. Fragments separated with the VAMOS++ magnetic spectrometer and identified on an event-by-event basis using measurements of time-of-flight, magnetic rigidity, energy loss and total energy. Measured Eγ, Iγ, recoil-γ, γγ coincidences using the EXOGAM array. Deduced level energies, J^{π}, B(M1)/B(E2) ratios. Comparison to large-scale, shell-model calculations.

^{126}In Levels

2016Re03 gives level energies relative to the lowest (9^{-}) state, setting its excitation energy equal to zero.

E(level)	J$^{\pi}$ †	Comments
0+x	(9^{-})	
202+x	(10^{-})	
1067+x	(11^{-})	B(M1)/B(E2)=0.0004 *1* (2016Re03).
1325+x	(12^{-})	B(M1)/B(E2)=0.008 *2* (2016Re03).

† From 2016Re03 based on decay patterns, comparison to shell model calculations and systematics of the energy difference between (10^{-}) and (9^{-}) states in the In isotopes.

γ(^{126}In)

Eγ †	E$_i$(level)	J^{π}_i	E$_f$	J^{π}_f	Mult. ‡	Comments
202	202+x	(10^{-})	0+x	(9^{-})	M1	
258	1325+x	(12^{-})	1067+x	(11^{-})	M1	Iγ(258γ)/Iγ(1123γ)=1.1 *3* from B(M1)/B(E2).
865	1067+x	(11^{-})	202+x	(10^{-})	M1	Iγ(865γ)/Iγ(1067γ)=2.7 *7* from B(M1)/B(E2).
1067	1067+x	(11^{-})	0+x	(9^{-})	E2	
1123	1325+x	(12^{-})	202+x	(10^{-})	E2	

† Deduced by the evaluators from level energies given by 2016Re03.

‡ As experimental setup is only sensitive to states with lifetimes less than 2 ns, 2016Re03 assume E2 multipolarity for all ΔJ=2 transitions. With the observation of crossover transitions, 2016Re03 assume ΔJ=1 in the sequence of adjacent levels and assume such transitions are M1 which are favored over E2 for low-energy transitions.

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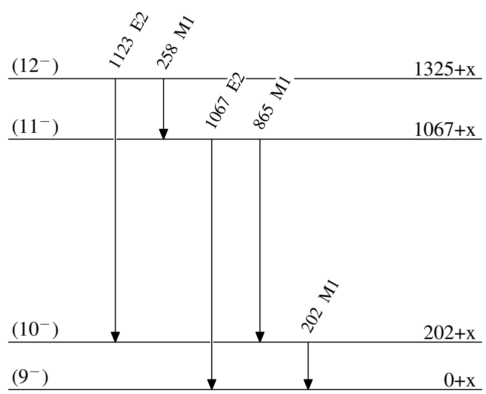
Level Scheme



$^{126}_{49}In_{77}$