^{9}Be(^{57}Cr,^{56}Crγ) 2006Ga35

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh	ENSDF	25-Mar-2022

One-neutron knockout reaction.

2006Ga35: E(^{57}Cr)=77 MeV/nucleon beam produced in fragmentation of ^{76}Ge beam at 130 MeV/nucleon with a ^{9}Be target. Fragments were separated by A1900 separator at NSCL-MSU facility. The ^{57}Cr beam impinged another ^{9}Be target and the residues were analyzed by S-800 spectrograph. The knockout residues were identified by time-of- flight, energy loss measurement, position and angle information. The SeGA array of 32-fold segmented HPGe detectors was used for γ-ray detection in coin with knockout residues. Deduced cross sections for population of excited states in ^{56}Cr. Comparison with shell-model calculations in full *fp* orbital, and nucleon-removal cross sections with a few-body eikonal approach.

^{56}Cr Levels

Percent population is deduced from γ-ray intensities relative to the number of knockout residues. Fraction of 2.6% for the ground state is obtained after subtraction of components to excited states.

E(level)†	J$^{\pi}$	Comments
0	0^{+}	Total (inclusive) cross section for ^{56}Cr=122 mb *8*. Population=3% *10*.
1002 *7*	2^{+}	Population=58% *11*. E(level): 1007 in level-scheme Fig. 2 of 2006Ga35.
1827 *7*	(2^{+})	E(level): 1831 in level-scheme Fig. 2 of 2006Ga35.
2068 *11*	4^{+}	Population=12.7% *60*. E(level): 2077 in level-scheme Fig. 2 of 2006Ga35.
2274 *9*	(3^{+})	Population=13.5% *31*. E(level): 2281 in level-scheme Fig. 2 of 2006Ga35.
3241 *13*	6^{+}	Population=13.2% *38*. E(level): 3252 in level-scheme Fig. 2 of 2006Ga35.

† From Eγ data, values are somewhat different in Fig. 2 of 2006Ga35, which are taken from literature.

γ(^{56}Cr)

E$_{\gamma}$†	E$_i$(level)	J$_i^{\pi}$	E$_f$	J$_f^{\pi}$	Comments
447 *5*	2274	(3^{+})	1827	(2^{+})	
825‡ *1*	1827	(2^{+})	1002	2^{+}	E$_{\gamma}$: rounded energy from the Adopted Levels, with assumed ΔEγ=1 keV.
1002 *7*	1002	2^{+}	0	0^{+}	
1066 *8*	2068	4^{+}	1002	2^{+}	
1173 *7*	3241	6^{+}	2068	4^{+}	

† From spectral Fig. 2 in 2006Ga35.

‡ Placement of transition in the level scheme is uncertain.

Legend

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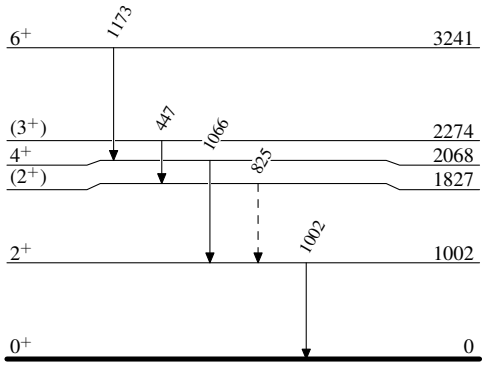
Level Scheme

γ Decay (Uncertain)



$^{56}_{24}Cr_{32}$