Coulomb excitation 1981Jo03

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Jean Blachot	NDS 111, 717 (2010)	1-Dec-2009

^{116}Sn(p,p′γ) E=6-8 MeV.
^{116}Sn(^{16}O,^{16}O′) E=48MeV $\gamma\gamma$ (1981Jo03,1981Ba05).
^{116}Sn(α,α′) E=10.5 MeV, ^{116}Sn(^{16}O,^{16}O′) E=42-46.0 MeV, (1975Gr30).
Others: E(α)=10 MeV (1968St14); E(α)=8-10 MeV, E(^{16}O)=32-40 MeV, E(^{32}S)=64-80 MeV (1970Kl06); E(α)=10 MeV, E(^{16}O)=45.5 MeV (1970St20); E(α)=14 MeV (1963Ha20); E(^{14}N)=52.5 MeV (1964Al26).
2008EA02: Reaction: Sn(^{58}Ni,^{58}Ni′γ), natural Sn target.
Beam: ^{58}Ni at E=190 MeV with intensity of 3 pnA; Targets: annealed Fe foil with thickness of 4.7 mg/cm^2 onto which were evaporated contiguous layers of natural Sn (0.73 mg/cm^2 thick) and Pd (0.06 mg/cm^2 thick). The Pd layer was placed on the front surface in order to prevent the loss of Sn material due to high heat and to provide absolute calibration of the transient-field strength. The iron foils was backed by an evaporated layer of indium (2.07 mg/cm^2 thick) and then was pressed on to a copper foil, nominally 12.5 μm thick; Measured: Eγ, Iγ, particle-γ coin using two pairs of Ge detectors and two Si detectors. Deduced: g-factor using the transient field technique.

^{116}Sn Levels

E(level)	J$^\pi$[†]	$T_{1/2}$	Comments
0.0	0$^+$	stable	
1293.5	2$^+$	0.374 ps *10*	g=−0.16 *9* (2008Ea02) $T_{1/2}$: from Adopted Levels. Other: B(E2): 0.216 (1970St20), 0.23 *1* (1970Kl06,1968St14). Q=+0.09 *13* (1970Kl06), +0.07 *10* (1975Gr30), 0.07 *16* (1970St20). g: 2008Ea02 give adopted g factor=−0.16 *9* from their measurement −0.15 26 and earlier g-factor=−0.16 *10* from 1980Ha19 deduced using the transient field integral PAC technique.
1757.0	0$^+$	44 ps *7*	$T_{1/2}$: from B(E2) (463γ)=0.060 *9* (1981Ba05).
2027.5	0$^+$		
2112.3	2$^+$	1.8 ps *+11−5*	$T_{1/2}$: from B(E2)=0.0021 *8* and branching(2112γ)=55.6% 15. Other: B(E2)(818γ)=0.013 *5*.
2225.3	2$^+$	2.4 ps *12*	
2266.1	3$^-$	0.34 ps *7*	B(E3)↑=0.127 *17* (1981Jo03) $T_{1/2}$: from B(E3) and branching(2266γ)=0.00154 *24* (see adopted γ).
2390.8	4$^+$	0.47 ps *9*	$T_{1/2}$: from B(E2) (1097γ)=0.076 *14* and branching(1097γ)=0.9972 *3*.
2530.1	4$^+$	<100 ps	
2545.3	(0$^+$)		

[†] From Adopted Levels.

γ(^{116}Sn)

E$_\gamma$[†]	E$_i$(level)	J$_i^\pi$	E$_f$	J$_f^\pi$	Mult.	E$_\gamma$[†]	E$_i$(level)	J$_i^\pi$	E$_f$	J$_f^\pi$	Mult.
198.0	2225.3	2$^+$	2027.5	0$^+$		931.8	2225.3	2$^+$	1293.5	2$^+$	M1+E2
278.5	2390.8	4$^+$	2112.3	2$^+$		1097.3	2390.8	4$^+$	1293.5	2$^+$	E2
303.8	2530.1	4$^+$	2225.3	2$^+$		1235.6	2530.1	4$^+$	1293.5	2$^+$	
355.4	2112.3	2$^+$	1757.0	0$^+$	E2	1293.5	1293.5	2$^+$	0.0	0$^+$	
416.8	2530.1	4$^+$	2112.3	2$^+$	E2	2112.3	2112.3	2$^+$	0.0	0$^+$	E2
468.5	2225.3	2$^+$	1757.0	0$^+$		2225.3	2225.3	2$^+$	0.0	0$^+$	
818.7	2112.3	2$^+$	1293.5	2$^+$	M1+E2						

[†] Rounded off values from adopted gammas.

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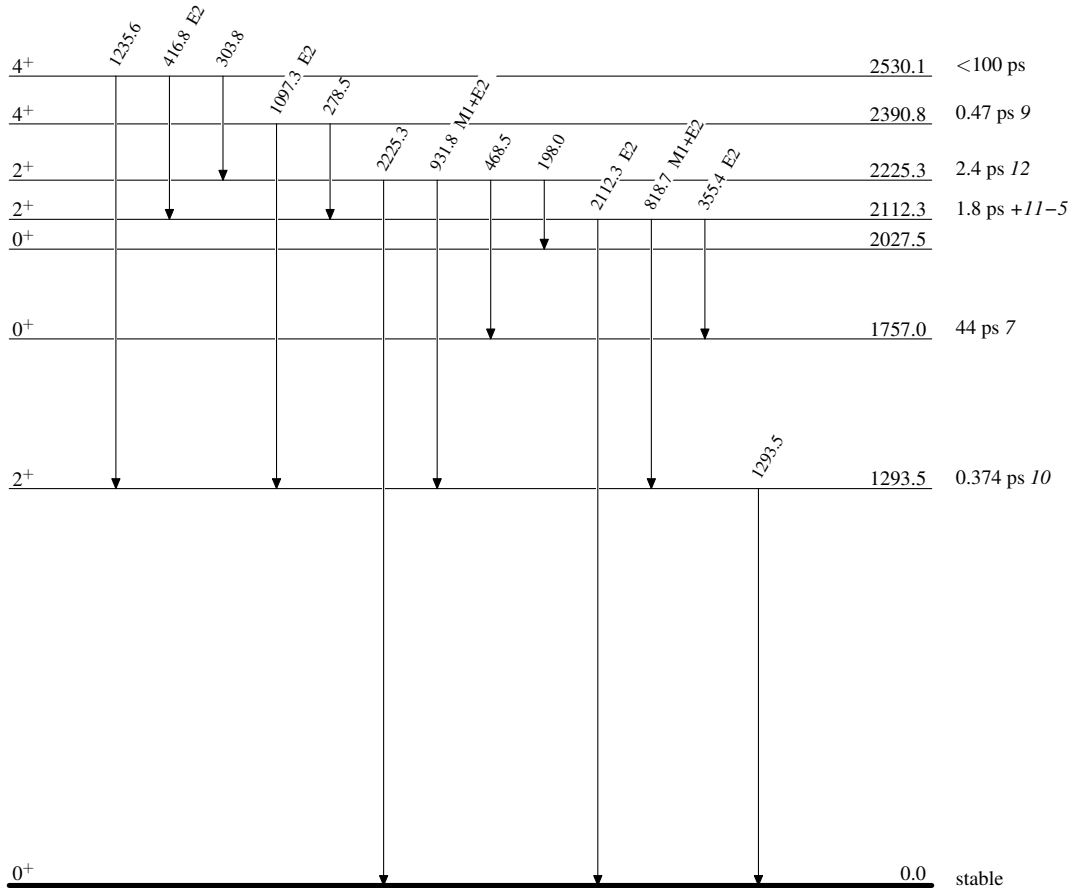
Level Scheme



$^{116}_{50}Sn_{66}$