^{128}Xe(γ,γ') 2006Vo04

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Zoltan Elekes and Janos Timar	NDS 129,191 (2015)	28-Feb-2015

2006Vo04: Bremsstrahlung radiation with endpoint energy of 4.1 MeV. 99.6% high pressure ^{128}Xe gas targets; ^{27}Al flux monitor. Measured Eγ, Iγ, $\gamma(\theta)$ at 90°, 127° and 150° using three Ge detectors. One detector with an anti-Compton shield. FWHM is about 2 keV at 1.3 MeV, 3 keV at 3 MeV.

$R(exp)_i=B(\pi\lambda;J\rightarrow J_i)/B(\pi\lambda;J\rightarrow J_{g.s.})$; decay branching ratios of the photo-excited states $R(exp)_i$ to lower lying excited levels labeled by i and to the ground state are defined as the ratio of the corresponding reduced transition probabilities (assuming pure dipole transitions).

^{128}Xe Levels

E(level)	J^π †	Γ_0	$I_{s,0}$ eV b‡	Comments
0	0^+			
443.0 *5*	2^+			
969.8 *6*	2^+			
2191.0 *10*	1	0.52×10^{-3} eV *11*	1.2 *3*	B(M1)↑=0.013 *3*, B(E1)↑=0.14×10^{-5} *3*.
2276.0 *10*	1	0.78×10^{-3} eV *15*	1.7 *3*	B(M1)↑=0.017 *3*, B(E1)↑=0.19×10^{-5} *4*.
2360.0 *10*	1	0.65×10^{-3} eV *14*	1.3 *3*	B(M1)↑=0.013 *3*, B(E1)↑=0.14×10^{-5} *3*.
2416.0 *10*	1	0.70×10^{-3} eV *13*	1.4 *3*	B(M1)↑=0.013 *2*, B(E1)↑=0.14×10^{-5} *3*.
2565.0 *10*	1	0.29×10^{-3} eV *11*	0.5 *2*	B(M1)↑=0.004 *2*, B(E1)↑=0.049×10^{-5} *18*.
2724.0 *10*	1	1.80×10^{-3} eV *22*	2.8 *3*	B(M1)↑=0.023 *3*, B(E1)↑=0.26×10^{-5} *3*.
2776.0 *10*	1	1.04×10^{-3} eV *16*	1.6 *2*	B(M1)↑=0.013 *2*, B(E1)↑=0.139×10^{-5} *22*.
2837.9 *6*	1	0.072 eV *4*	76 *5*	B(M1)↑=0.82 *4*, B(E1)↑=9.1×10^{-5} *5*.
3104.0 *7*	1	0.0234 eV *12*	18.0 *12*	B(M1)↑=0.203 *11*, B(E1)↑=2.25×10^{-5} *12*.
3204.0 *10*	1	1.03×10^{-3} eV *22*	1.2 *2*	B(M1)↑=0.008 *2*, B(E1)↑=0.090×10^{-5} *19*.
3312.0 *7*	1	8.6×10^{-3} eV *7*	1.8 *3*	B(M1)↑=0.062 *5*, B(E1)↑=0.68×10^{-5} *5*.
3406.0 *6*	1	0.0151 eV *10*	6.9 *6*	B(M1)↑=0.099 *7*, B(E1)↑=1.09×10^{-5} *8*.
3463.0 *7*	1	5.7×10^{-3} eV *6*	3.4 *5*	B(M1)↑=0.036 *4*, B(E1)↑=0.39×10^{-5} *4*.
3524.1 *10*	1	2.3×10^{-3} eV *5*	2.1 *4*	B(M1)↑=0.013 *3*, B(E1)↑=0.15×10^{-5} *3*.
3566.1 *10*	1	1.0×10^{-3} eV *4*	0.9 *3*	B(M1)↑=0.006 *2*, B(E1)↑=0.062×10^{-5} *24*.
3760.9 *8*	1	9.5×10^{-3} eV *12*	2.3 *5*	B(M1)↑=0.046 *6*, B(E1)↑=0.51×10^{-5} *7*.
3865.1 *10*	1	0.0301 eV *24*	23.2 *19*	B(M1)↑=0.135 *11*, B(E1)↑=1.50×10^{-5} *12*.
3920.1 *10*	1	6.5×10^{-3} eV *15*	4.8 *12*	B(M1)↑=0.028 *7*, B(E1)↑=0.31×10^{-5} *7*.

† From Adopted Levels. J=1 assignments were made using the gamma intensity ratio measured at two angles.
‡ Integrated cross section in EV.b units.

$\gamma(^{128}Xe)$

E_i(level)	J_i^π	E_γ	E_f	J_f^π	E_i(level)	J_i^π	E_γ	I_γ †	E_f	J_f^π
443.0	2^+	442.9‡	0	0^+	2837.9	1	1868	26 *3*	969.8	2^+
969.8	2^+	526.6‡	443.0	2^+			2395	10.2 *12*	443.0	2^+
		969.5‡	0	0^+			2838	100	0	0^+
2191.0	1	2191	0	0^+	3104.0	1	2661	56 *6*	443.0	2^+
2276.0	1	2276	0	0^+			3104	100	0	0^+
2360.0	1	2360	0	0^+	3204.0	1	3204		0	0^+
2416.0	1	2416	0	0^+	3312.0	1	2869	100 *19*	443.0	2^+
2565.0	1	2565	0	0^+			3312	24	0	0^+
2724.0	1	2724	0	0^+	3406.0	1	2436	77 *12*	969.8	2^+
2776.0	1	2776	0	0^+			2963	40 *7*	443.0	2^+

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$\gamma(^{128}Xe)$ (continued)

E_i(level)	J_i^π	E_γ	I_γ †	E_f	J_f^π	E_i(level)	J_i^π	E_γ	I_γ †	E_f	J_f^π
3406.0	1	3406	100	0	0^+	3760.9	1	2791	237 *61*	969.8	2^+
3463.0	1	3020	63 *15*	443.0	2^+			3761	100	0	0^+
		3463	100	0	0^+	3865.1	1	3865		0	0^+
3524.1	1	3524		0	0^+	3920.1	1	3920		0	0^+
3566.1	1	3566		0	0^+						

† Deduced by the compilers from R(exp) values listed by 2006Vo04.
‡ From Adopted Gammas (rounded values).

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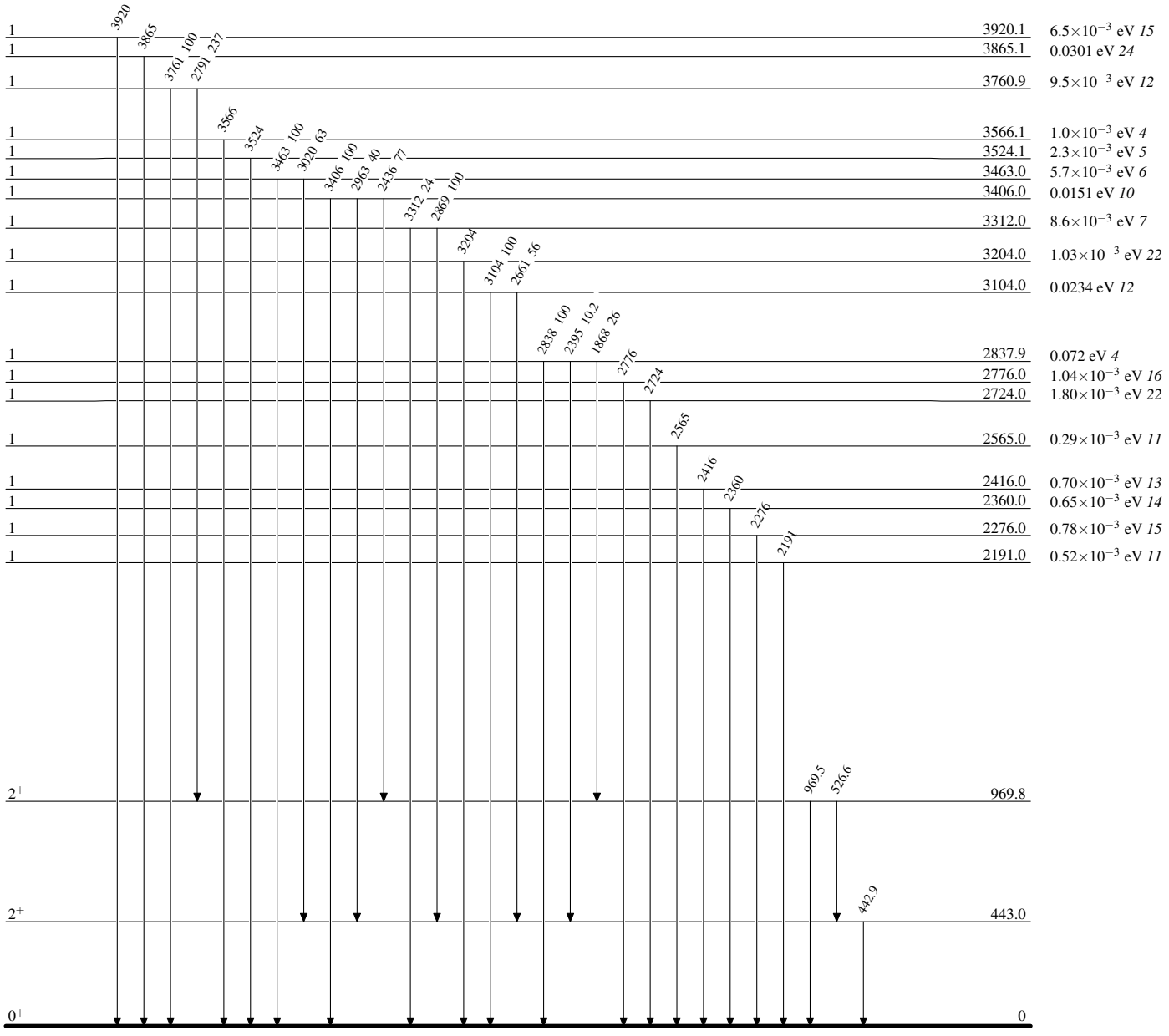
Level Scheme

Intensities: Relative photon branching from each level



$^{128}_{54}Xe_{74}$