^{110}Rh β^- decay (3.35 s) 1988Ay02

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	G. Gürdal and F. G. Kondev	NDS 113, 1315 (2012)	1-Aug-2011

Parent: ^{110}Rh: E=0.0; $J^\pi=(1^+)$; $T_{1/2}$=3.35 s *12*; Q(β^-)=5505 *18*; %β^- decay=100.0

Source: ^{238}U(p,F), E(p) = 20 MeV. IGISOL on-line mass separator facility was used to separate the parent ^{110}Rh nucleus. The ^{110}Rh production rate was ≈2×10^3 ions/μC. The ion beams of the separated activities were implanted on a 6 mm wide moving tape. The γ-rays were detected by 25% and 23% coaxial Ge detectors. A 1.4 cm^3 planar Ge detector was used to detect the low-energy γ-rays. The conversion electrons were detected by a 3 mm thick, LN-cooled Si(Li) detector. β-rays were detected with a 1 mm thick NE102 plastic ΔE detector in a combination with a 6.0 cm long and 7.5 cm in diameter NEE102 plastic scintillator. Measured: Eγ, Iγ, $\gamma\gamma$, $\beta\gamma$, ce. Deduced: Levels, Mult., J^π.

Other: 1972PiZQ.

^{110}Pd Levels

E(level)[†]	J^π[‡]
0.0	0^+
373.88 *21*	2^+
813.63 *23*	2^+
946.5 *4*	0^+
1170.6 *3*	0^+
1214.40 *24*	2^+

† From least-squares fit to Eγ.
‡ From Adopted Levels.

β^- radiations

Since the decay scheme is incomplete, no Iβ^- and log *ft* values were calculated.

E(decay)	E(level)	Iβ^-[†]	Comments
(5505 *18*)	0.0	43 *22*	Iβ^-: From 1988Ay02, by comparing the total beta intensity to that deduced in coincidence with 373.88γ during the beam-off period.

† Absolute intensity per 100 decays.

$\gamma(^{110}Pd)$

Iγ normalization: From Σ Ti(g.s.)=57% *22*, based on 43% *22* ^{110}Rh ($J^\pi=(1^+)$) direct β^- feeding to ^{110}Pd g.s. ($J^\pi=0^+$) (1988Ay02).

E$_\gamma$[†]	I$_\gamma$[‡@]	E$_i$(level)	J^π_i	E$_f$	J^π_f	Mult.[#]	δ	Comments
357.0 *3*	2.4 *7*	1170.6	0^+	813.63	2^+	[E2]		
373.8 *3*	100	373.88	2^+	0.0	0^+	E2		Mult.: From 1988Ay02, the conversion electrons were measured but the value of α(exp) was not given by the authors.
439.7 *3*	14.9 *5*	813.63	2^+	373.88	2^+	E2+M1	−4.6 *+19−12*	δ: From adopted gammas.
572.6 *3*	2.2 *6*	946.5	0^+	373.88	2^+	[E2]		
796.7 *3*	7.5 *10*	1170.6	0^+	373.88	2^+	[E2]		

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^{110}Rh β^- decay (3.35 s) 1988Ay02 (continued)

$\gamma(^{110}Pd)$ (continued)

E_γ [†]	I_γ [‡@]	E_i(level)	J_i^π	E_f	J_f^π	Mult. [#]
813.7 *3*	5.5 *8*	813.63	2^+	0.0	0^+	[E2]
840.5 *3*	1.6 *6*	1214.40	2^+	373.88	2^+	
1214.4 *3*	1.1 *5*	1214.40	2^+	0.0	0^+	

† From 1988Ay02. $\Delta E\gamma$ = 0.3 keV, as stated by the authors.
‡ From 1988Ay02, combination of both ^{110}Rh β- (3.35 s) (J^π=(1^+)) and ^{110}Rh β- (28.0 s) (J^π=(6^+)) decays.
# From adopted gammas.
@ For absolute intensity per 100 decays, multiply by ≈0.53.

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Decay Scheme

Intensities: Relative I_γ