

$^{142}\text{Nd}(^{48}\text{Ti,p3n}\gamma)$ 2003Re33

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	J. C. Batchelder and A. M. Hurst, M. S. Basunia		NDS 183, 1 (2022)	1-Mar-2022

Adapted/edited the XUNDL dataset Compiled by B. Singh (McMaster) November 27, 2003.

E=230, 238 MeV. Measured E_γ , I_γ , $\gamma\gamma$, $\gamma(\theta)$, $\gamma(\text{anisotropy})$ Measurement done at 88" cyclotron at LBNL. The GAMMASPHERE array consisting of 102 Ge detectors with BGO Compton- suppressor shields arranged in 16 angular rings around the target. Additionally, the auxiliary device HERCULES was used to detect and gate on evaporation residues.

 ^{186}Tl Levels

E(level) [†]	J^π [‡]	$T_{1/2}$ [#]	Comments
40 39	(7 ⁺)	27.5 s 10	Additional information 1. E(level): From Adopted Levels. Additional information 2.
414 39	(10 ⁻)	3.32 s 11	
690 39	(11 ⁻)		
1011 39	(12 ⁻)		
1255 39	(13 ⁻)		
1363 39	(13 ⁻)		

[†] From Adopted Levels.

[‡] Proposed in 2003Re33 based on γ -ray multipolarity and placement in the decay scheme.

[#] From Adopted Levels.

 $\gamma(^{186}\text{Tl})$

E_γ	I_γ	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Mult. [†]	Comments
243.4 3	21 5	1255	(13 ⁻)	1011	(12 ⁻)	D+Q	$A_2 = -0.07$ 17 $R(\text{anisotropy}) = 0.84$ 27.
275.9 1	100 3	690	(11 ⁻)	414	(10 ⁻)	D	
321.7 1	87 3	1011	(12 ⁻)	690	(11 ⁻)	D+Q	$A_2 = -0.382$ 40 $R(\text{anisotropy}) = 0.68$ 10. $A_2 = +0.02$ 16
352.1 4	21 6	1363	(13 ⁻)	1011	(12 ⁻)	D	
597 [‡] 1		1011	(12 ⁻)	414	(10 ⁻)		$A_2 = -0.88$ 12. $A_2 = -0.25$ 18 $R(\text{anisotropy}) = 0.87$ 30.
672.9 5	23 8	1363	(13 ⁻)	690	(11 ⁻)		

[†] Assigned by evaluators based on $\gamma(\theta)$ and $\gamma(\text{anisotropy})$ $R_{\text{ani}} = I_\gamma(\theta_{\text{FB}})/I_\gamma(\theta_S)$ with $31.7^\circ \leq \theta_{\text{FB}} \leq 50.1^\circ$, $129.9^\circ \leq \theta_{\text{FB}} \leq 148.3^\circ$, and $79.2^\circ \leq \theta_S \leq 100.8^\circ$. Pure stretched E2 are expected to have $R_{\text{ani}} = 1.2$ 7.

[‡] Placement of transition in the level scheme is uncertain.

