^{152}Gd(t,p) 1980Sh08

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	N. Nica	NDS 200,2 (2025)	22-Aug-2022

Additional information 1.

(t,p) reaction on enriched (≥98%) target, thickness≈50 μg/cm^2. E(t)=15 MeV. Reaction products analyzed using a split-pole magnetic spectrograph, FWHM≈18 keV, and detected in photographic emulsions. Measured t(θ), compared with DWBA calculations.

^{154}Gd Levels

Strong population in (t,p) is used by 2003Ku19 as support for their assignment of this band as a pairing isomer.

E(level)	J$^\pi$[†]	(dσ/dΩ)(μb/sr)[‡]
0[#]	0$^+$	267
123[#]	2$^+$	17
371[#]	4$^+$	3
681[@]	0$^+$	162
816[@]	2$^+$	9
1048[@]	4$^+$	2
1182[&]	0$^+$	138
1252[a]	3$^-$	21
1418[&]	2$^+$	18
1576[b]	0$^+$	23

[†] From the adopted values. Those reported by 1980Sh08 are consistent with these.
[‡] Values are for θ=30°.
[#] Band(A): K^π=0$^+$ ground-state band.
[@] Band(B): K^π=0$^+$ β-vibrational band.
[&] Band(C): Second excited K$^\pi$=0$^+$ band.
[a] Band(D): K^π=0$^-$ octupole-vibrational band.
[b] Band(E): Excited K$^\pi$=0$^+$ band.

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Band(E): Excited $K^{\pi}=0^{+}$ band

0^{+} 1576

Band(C): Second excited $K^{\pi}=0^{+}$ band

2^{+} 1418

Band(D): $K^{\pi}=0^{-}$ octupole-vibrational band

3^{-} 1252

0^{+} 1182

Band(B): $K^{\pi}=0^{+}$ β-vibrational band

4^{+} 1048

2^{+} 816

0^{+} 681

Band(A): $K^{\pi}=0^{+}$ ground-state band

4^{+} 371

2^{+} 123

0^{+} 0

$^{154}_{64}Gd_{90}$