

$^{42}\text{Ca}(^{16}\text{O},^{16}\text{O}')$ 1982Re03

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	Jun Chen [#] and Balraj Singh		NDS 135, 1 (2016)	31-May-2016

Target ^{42}Ca g.s. $J^\pi=0^+$.

1982Re03: E=60 MeV ^{16}O beam was produced at the Argonne FN tandem. Target of 93.7% enriched ^{42}Ca . Outgoing particles were momentum analyzed with the Argonne split-pole magnetic spectrograph and detected in a position-sensitive ionization chamber in the focal plane. Measured $\sigma(E(^{16}\text{O},\theta))$. Deduced levels, J^π , L, deformation lengths, $B(\lambda)$ from DWBA analysis and coupled-channels analysis.

 ^{42}Ca Levels

E(level) [†]	L [‡]	Comments
0		
1525	2	
1837		
2424	2	
2752	4	$B(E4)\uparrow=1.18\times 10^{-4}$
3254		
3447	3	
4100	5	
4449	2	$B(E2)\uparrow=6.07\times 10^{-3}$
4690	3	$B(E3)\uparrow=1.68\times 10^{-3}$
4971	3	$B(E3)\uparrow=1.13\times 10^{-3}$

[†] Rounded values from Adopted Levels.

[‡] From comparison of experimental data with DWBA and coupled-channels calculations.