

$^2\text{H}(^{14}\text{C},\alpha)$ 2014Wu10

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	J. H. Kelley, J. E. Purcell and C. G. Sheu		NP A968, 71 (2017)	1-Jan-2017

2014Wu10: XUNDL dataset compiled by TUNL, 2015.

The authors used the highly spin selective (d, α) deuteron transfer reaction to study states with “stretched” nuclear configurations. A beam of 17.1 MeV/nucleon ^{14}C ions, from the negative ion sputter source at the ANL/ATLAS facility, impinged on 145 $\mu\text{g}/\text{cm}^2$ (CD₂)_n polyethylene foils located at the HELIOS HELical Orbit Spectrometer target position. The kinematics of α particles from (d, α) reactions were determined from analysis of the HELIOS array data, while recoiling boron isotopes were detected in an array of position sensitive Si detectors that covered $\theta_{\text{lab}}=1.0^\circ-5.6^\circ$ for 92% of the azimuthal angle range. The resolution for excitation energy was found as ≈ 240 keV FWHM.

The reaction data were analyzed for α -particles in coincidence with any boron isotope; this gave access to population of bound states, as well as, 1-n and 2-n unbound states.

 ^{12}B Levels

E(level) [†]	J π [†]
0	1 ⁺
953.14	2 ⁺
3760	2 ⁺
4990	1 ⁺
5610	3 ⁺

[†] From Adopted Levels.