## $^{208}\text{Pb}(^{12}\text{C},^{13}\text{C})$  1976To08,1984Vo06,1993Yo01

### History

| Type | Author | Citation | Literature Cutoff Date |
|------|--------|----------|------------------------|
| Full Evaluation | F. G. Kondev, S. Lalkovski | NDS 112, 707 (2011) | 1-Aug-2010 |

1984Vo06: Facility: VICKSI; Beam: E($^{12}\text{C}^{4+}$)=101 MeV, Ic=100 nA; Target: $^{208}\text{Pb}$, 100 $\mu g/cm^2$ and 376 $\mu g/cm^2$, self supporting; Detectors: Q3D, position-sensitive resistive wires; Measured: $\Delta E$, E, time of flight; Deduced: level energies, $J^\pi$, FWHM=120 keV, $d\sigma/d\Omega$, DWBA.

1976To08: Facility: Oak Ridge isochronous cyclotron; Beam: E($^{12}\text{C}^{4+}$)=97.9 MeV, Ic=200 nA; Target: 100 $\mu g/cm^2$ evaporated on 40 $\mu g/cm^2$ carbon foil; Detectors: Elbek spectrograph, position-sensitive proportional counters, Q1D, position-sensitive silicon detector; Measured: $\Delta E$, E, FWHM=215 keV, $d\sigma/d\Omega$: Deduced: level energies, $J^\pi$, DWBA;

1993Yo01: Facility: MSU, K500 cyclotron; Beam: E($^{12}\text{C}$)=360 MeV; Target: self-supporting, 4.95 $mg/cm^2$, enriched to 92.40% in $^{208}\text{Pb}$; Detectors: broad range magnetic spectrograph, position-sensitive counters, ion chambers, scintillator detectors; Measured: E, $d^2\sigma/(d\Omega\, dE)$; Observed: broad structures at 1100 keV ($\Gamma$=1700), 5800 keV ($\Gamma$=3500), and 10100 keV ($\Gamma$=2000) and interpreted as single-particle excitations. Similar peaks are observed in $^{207}\text{Tl}$.

Others: 2001Sa41, 1979Fr07, 1972La38.

### $^{207}\text{Pb}$ Levels

| E(level)[†] | $J^{\pi}$[‡] | S[#] | Comments |
|-------------|--------------|------|----------|
| 0 | $1/2^-$ | 2.5 | S: 2.49 (1976To08). configuration: $\nu(3p_{1/2})^{-1}$. |
| 570 | $5/2^-$ | 6.2 | S: 6.6 (1976To08). configuration: $\nu(2f_{5/2})^{-1}$. |
| 900 | $3/2^-$ | 4.3 | S: 4.1 (1976To08). configuration: $\nu(3p_{3/2})^{-1}$. |
| 1630 | $13/2^+$ | 10.3 | S: 13.7 (1976To08). configuration: $\nu(1i_{13/2})^{-1}$. |
| 2340 | $7/2^-$ | 8.5 | S: 6.4 (1976To08). configuration: $\nu(2f_{7/2})^{-1}$. |

[†] From 1976To08.
[‡] Based on DWBA in 1976To08 and 1984Vo06.
[#] From 1984Vo06 (potential 3) with the assumption that S($p_{1/2}$)($^{13}\text{C}$)=0.7; Other: 1976To08, for S($p_{1/2}$)($^{13}\text{C}$)=0.63.