## $^{1}$H($^{58}$Ti,$^{58}$Ti′γ) 2013Su20

History

| Type | Author | Citation | Literature Cutoff Date |
|---|---|---|---|
| Full Evaluation | Balraj Singh | ENSDF | 27-May-2014 |

Inelastic (p,p′) scattering.

2013Su20 (also 2008Ao01): $^{58}$Ti beam at 42.0 MeV/nucleon obtained from primary beam of $^{70}$Zn at 63 MeV/nucleon impinging a $^{9}$Be target followed by separation of fragments using RIPS magnetic separator at RIKEN facility. Fragment identification was achieved by time-of-flight method, magnetic rigidity and E-ΔE signals. secondary target was 72 mg/cm$^2$ thick liquid hydrogen (CRYPTA). Measured (fragment)γ coin using parallel-plate avalanche counters (PPAC) for particles and DALI2 array of 160 NaI(Tl) detectors for γ rays. Scattered particles were identified using the tof mass analyzer (TOMBEE) with the measurement of tof, energy loss ΔE, and total kinetic energy E, resulting in tof-ΔE and tof-E correlations. Comparison with shell-model calculations.

### $^{58}$Ti Levels

| E(level) | $J^\pi$ | Comments |
|---|---|---|
| 0 | $0^+$ | |
| 1046 *11* | $2^+$ | Deduced deformation length=0.83 fm *+22−30*, $\beta_2$=0.18 *+5−6* (2013Su20) from distorted-wave theory analysis of (p,p′) data in inverse kinematics, using ECIS97 computer code.<br>σ=13 mb *7* (2013Su20) for population of first $2^+$ state.<br>Population=34% *16* (2013Su20). |
| 2422? *21* | | Additional information 1. |
| 2881 *29* | | E(level): uncertainty=33 keV is given in 2013Su20. |

### γ($^{58}$Ti)

| $E_\gamma$ | $E_i$(level) | $J_i^\pi$ | $E_f$ | $J_f^\pi$ | Comments |
|---|---|---|---|---|---|
| 1046 *11* | 1046 | $2^+$ | 0 | $0^+$ | $E_\gamma$: previous value=1046 *17* (2008Ao01). |
| 1376[†] *18* | 2422? | | 1046 | $2^+$ | |
| 1835 *27* | 2881 | | 1046 | $2^+$ | |

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

Legend

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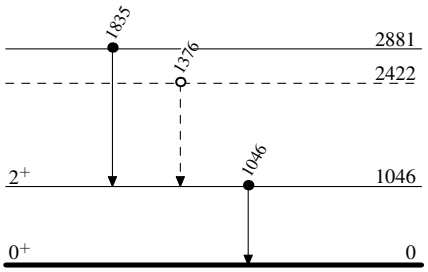
Level Scheme

$\gamma$ Decay (Uncertain)
Coincidence
Coincidence (Uncertain)




$^{58}_{22}Ti_{36}$