¹²⁴Sn(²⁹Si,p4nγ):SD 1998Ha21

| | | History | |
|-----------------|---------|-------------------|------------------------|
| Туре | Author | Citation | Literature Cutoff Date |
| Full Evaluation | N. Nica | NDS 117, 1 (2014) | 1-Oct-2013 |

Additional information 1.

1998Ha21 (also 1997Ha19): ¹²⁴Sn(²⁹Si,p4nγ) E=158 MeV. Measured Eγ, γγγγ, γγγγ(particle) coin using GAMMASPHERE array of 95 HPGe detectors and MICROBALL particle-detector array of 95 elements. Deduced SD bands. TRS and single-particle Routhian calculations.

| ¹⁴⁸ Eu | Levels |
|-------------------|--------|
| Eu | Levels |

| E(level) | \mathbf{J}^{π} | E(level) | \mathbf{J}^{π} | E(level) | J^{π} | E(level) | \mathbf{J}^{π} |
|-------------------------|--------------------|--------------------------|--------------------|---------------------------------|--------------------|----------------------------------|--------------------|
| x [†] | J | 7416.4+x [†] 5 | J+16 | 18293.2+x [†] 9 | J+32 | 6996.2+y [‡] 17 | J1+14 |
| 747.7+x [†] 1 | J+2 | 8581.7+x [†] 5 | J+18 | y‡ | J1 | 8208.6+y [‡] 19 | J1+16 |
| 1545.6+x [†] 2 | J+4 | 9801.8+x [†] 6 | J+20 | 844.2+y [‡] 6 | J1+2 | 9477.3+y [‡] 20 | J1+18 |
| 2393.9+x [†] 3 | J+6 | 11077.5+x [†] 6 | J+22 | 1739.0+y [‡] 8 | J1+4 | 10799.3+y [‡] 20 | J1+20 |
| 3293.4+x [†] 3 | J+8 | 12408.4+x [†] 7 | J+24 | 2685.1+y [‡] 10 | J1+6 | 12177.1+y [‡] 22 | J1+22 |
| 4244.8+x [†] 4 | J+10 | 13795.9+x [†] 7 | J+26 | 3683.2+y [‡] 11 | J1+8 | 13611.1+y [‡] 22 | J1+24 |
| 5248.6+x [†] 4 | J+12 | 15239.2+x [†] 7 | J+28 | 4734.1+y [‡] <i>13</i> | J1 + 10 | 15100.3+y [‡] 25 | J1+26 |
| 6305.7+x [†] 5 | J+14 | 16738.1+x [†] 8 | J+30 | 5838.3+y [‡] 14 | J1+12 | 16644.4+y [‡] <i>30</i> | J1+28 |

[†] Band(A): SD-1 band (1998Ha21). configuration= $\pi(6^2(1/2[301],\alpha=+1/2))\nu^{71}$ (1998Ha21). This band shows evidence of $\Delta J=2$ staggering (average staggering of 0.30 keV *13*) for several transitions in the middle energy region (1997Ha19). Percent population intensity=0.79 8 of ¹⁴⁸Eu channel (1998Ha21).

[‡] Band(B): SD-2 band (1998Ha21). configuration= $\pi(6^2(1/2[301],\alpha=-1/2)) \nu 7^1$ (1998Ha21). Percent population=0.24 3 or 30% 3 of SD-1 band (1998Ha21).

| E_{γ}^{\dagger} | I_{γ} | E_i (level) | \mathbf{J}_i^{π} | E_f | J_f^π |
|------------------------|--------------|---------------|----------------------|-------------|--------------------|
| 747.7 1 | 0.93 9 | 747.7+x | J+2 | х | J |
| 797.9 2 | 0.93 9 | 1545.6+x | J+4 | 747.7+x | J+2 |
| 844.2 6 | | 844.2+y | J1+2 | У | J1 |
| 848.3 <i>1</i> | 1.09 11 | 2393.9+x | J+6 | 1545.6+x | J+4 |
| 894.8 5 | | 1739.0+y | J1+4 | 844.2+y | J1+2 |
| 899.5 2 | 0.98 10 | 3293.4+x | J+8 | 2393.9+x | J+6 |
| 946.1 6 | | 2685.1+y | J1+6 | 1739.0+y | J1+4 |
| 951.4 2 | 1.14 11 | 4244.8+x | J+10 | 3293.4+x | J+8 |
| 998.1 5 | | 3683.2+y | J1+8 | 2685.1+y | J1+6 |
| 1003.8 2 | 1.10 11 | 5248.6+x | J+12 | 4244.8+x | J+10 |
| 1050.9 5 | | 4734.1+y | J1 + 10 | 3683.2+y | J1+8 |
| 1057.1 2 | 0.80 8 | 6305.7+x | J+14 | 5248.6+x | J+12 |
| 1104.2 6 | | 5838.3+y | J1+12 | 4734.1+y | J1+10 |
| 1110.7 2 | 1.05 10 | 7416.4+x | J+16 | 6305.7+x | J+14 |
| 1157.9 9 | | 6996.2+y | J1+14 | 5838.3+y | J1+12 |
| 1165.3 2 | 0.89 9 | 8581.7+x | J+18 | 7416.4+x | J+16 |
| 1212.4 8 | | 8208.6+y | J1+16 | 6996.2+y | J1+14 |
| 1220.1 2 | 0.78 8 | 9801.8+x | J+20 | 8581.7+x | J+18 |
| 1268.7 7 | | 9477.3+y | J1+18 | 8208.6+y | J1+16 |
| 1275.7 2 | 0.59 6 | 11077.5+x | J+22 | 9801.8+x | J+20 |
| 1322.0 5 | | 10799.3+y | J1+20 | 9477.3+y | J1+18 |
| 1330.9 2 | 0.74 7 | 12408.4+x | J+24 | 11077.5 + x | J+22 |
| 1377.8 7 | | 12177.1+y | J1+22 | 10799.3+y | J1+20 |

 $\gamma(^{148}\text{Eu})$

Continued on next page (footnotes at end of table)

¹²⁴Sn(²⁹Si,p4nγ):SD **1998Ha21** (continued)

$\gamma(^{148}\text{Eu})$ (continued)

| E_{γ}^{\dagger} | I_{γ} | E _i (level) | \mathbf{J}_i^{π} | E_f | ${ m J}_f^\pi$ |
|------------------------|--------------|------------------------|----------------------|-----------|----------------|
| 1387.5 2 | 0.60 6 | 13795.9+x | J+26 | 12408.4+x | J+24 |
| 1434.0 6 | | 13611.1+y | J1+24 | 12177.1+y | J1+22 |
| 1443.3 2 | 0.39 4 | 15239.2+x | J+28 | 13795.9+x | J+26 |
| 1489.2 10 | | 15100.3+y | J1+26 | 13611.1+y | J1+24 |
| 1498.9 <i>3</i> | 0.48 5 | 16738.1+x | J+30 | 15239.2+x | J+28 |
| 1544.1 <i>14</i> | | 16644.4+y | J1+28 | 15100.3+y | J1+26 |
| 1555.1 4 | 0.31 3 | 18293.2+x | J+32 | 16738.1+x | J+30 |

[†] From 1998Ha21.

¹²⁴Sn(²⁹Si,p4nγ):SD 1998Ha21 Level Scheme Legend







¹⁴⁸₆₃Eu₈₅

¹²⁴Sn(²⁹Si,p4nγ):SD 1998Ha21

| | Band(I (19 | B): SD-2 band 998Ha21) |
|-------------------------------|---------------|---------------------------|
| | J1+28 | 16644.4+y |
| | J1+26 | 1544 15100.3+y |
| | J1+24 | 1489 13611.1+y |
| | J1+22 | ¹⁴³⁴ 12177.1+y |
| | J1+20 | ¹³⁷⁸ 10799.3+y |
| | J1+18 | ¹³²² 9477.3+y |
| | J1+16 | ¹²⁶⁹ 8208.6+y |
| | J1+14 | ¹²¹² 6996.2+y |
| | J1+12 | ¹¹⁵⁸ 5838.3+y |
| | J1+10 | ¹¹⁰⁴ 4734.1+y |
| | J1+8 | ¹⁰⁵¹ 3683.2+y |
| | J1+6 | ⁹⁹⁸ 2685.1+y |
| Band(A): SD-1 band | J1+4 | 946 1739.0+y |
| (1998Ha21) | J1+2 | ⁸⁹⁵ 844.2+y |
| I+32 18293.2+x | J1 | 844 y |
| 1555 1+30 16738.1+x | | |
| 1499 1+28 15239.2+x | | |
| 1443 1+26 13795.9+x | | |
| 1388 1+24 12408.4+x | | |
| 1331 11077.5+x | | |
| J+20 ¹²⁷⁶ 9801.8+x | | |
| J+18 ¹²²⁰ 8581.7+x | | |
| 1165 7416.4+x | | |
| J+14 ¹¹¹¹ 6305.7+x | | |
| 1+12 1057 5248.6+x | | |
| J+10 ¹⁰⁰⁴ 4244.8+x | | |
| J+8 951 3293.4+x | | |
| 1+6 900 2393.9+x | | |
| 1+4 848 1545.6+x | | |
| +2 ⁷⁹⁸ 747.7+x | | |
| 748 x | | |

J+32

J+30

J+28

J+26

J+24

J+22

J+20

J+18

J+16

J+14

J+12

J+10

J+8

J+6

J+4 J+2 J

¹⁴⁸₆₃Eu₈₅