## $^{124}$Sn($^{6}$Li,3n$\gamma$) 1982Sh20

| Type | Author | History Citation | Literature Cutoff Date |
|---|---|---|---|
| Full Evaluation | A. Hashizume | NDS 112, 1647 (2011) | 1-Oct-2009 |

1982Sh20: E=32-42 MeV; $\gamma$, $\gamma\gamma$ coin, $\gamma(\theta)$, beam-$\gamma$(t).
1977Go04: up to 35 MeV; $\gamma$, $\gamma(\theta)$, $\gamma\gamma$ coin, beam-$\gamma$(t).
1977Fo03: E=25-35 MeV; $\gamma$, $\gamma\gamma$ coin, $\gamma(\theta$,t).
The decay scheme is that proposed by 1982Sh20.

### $^{127}$I Levels

| E(level)[†] | J$^{\pi}$[‡] | Comments |
|---|---|---|
| 0.0[#] | 5/2$^+$ | |
| 57.67[&] *19* | 7/2$^+$ | |
| 651.1[#] *4* | 9/2$^{(+)}$ | |
| 716.5 *8* | (11/2$^+$) | |
| 744.7 *3* | 9/2$^{(+)}$ | |
| 1235.3[@] *4* | (11/2)$^-$ | |
| 1266.6[#] *8* | (13/2$^+$) | |
| 1350[&a] | (9/2$^+$) | Additional information 1. |
| 1480.1[&] *9* | (15/2$^+$) | |
| 1675.6[a] *8* | (11/2$^+$) | |
| 1876.8[#] *9* | (17/2$^+$) | |
| 1894.2[@] *11* | (15/2)$^-$ | |
| 2072.0[a] *8* | (13/2$^+$) | |
| 2360.2[&] *10* | (19/2$^+$) | |
| 2412.0[a] *8* | (15/2$^+$) | |
| 2546.0[@] *15* | (19/2)$^-$ | |
| 2810.3[#] *10* | (21/2$^+$) | |
| 2976.0[@] *16* | (23/2)$^-$ | |
| 3350.5[@] *16* | | |

[†] From a least-squares fit to E$_\gamma$'s.
[‡] From Adopted Levels.
[#] 2d$_{5/2}$ band.
[@] 1h$_{11/2}$ band.
[&] 1g$_{7/2}$ band.
[a] $\Delta$J=1 1g$_{9/2}$ band. Bandhead energy is from syst.

### $\gamma(^{127}I)$

| E$_\gamma$[†] | I$_\gamma$[†] | E$_i$(level) | J$_i^\pi$ | E$_f$ | J$_f^\pi$ | Mult.[‡] | $\delta$[#] |
|---|---|---|---|---|---|---|---|
| 57.6 *2* | | 57.67 | 7/2$^+$ | 0.0 | 5/2$^+$ | | |
| 325.6 *10* | | 1675.6 | (11/2$^+$) | 1350 | (9/2$^+$) | | |
| 340.1 *4* | 8 *2* | 2412.0 | (15/2$^+$) | 2072.0 | (13/2$^+$) | | |
| 374.5 *5* | 4 *2* | 3350.5 | | 2976.0 | (23/2)$^-$ | | |
| 396.5 *4* | 8 *2* | 2072.0 | (13/2$^+$) | 1675.6 | (11/2$^+$) | | |
| 430.0 *4* | 7 *2* | 2976.0 | (23/2)$^-$ | 2546.0 | (19/2)$^-$ | Q | |
| 490.6 *3* | 27 *3* | 1235.3 | (11/2)$^-$ | 744.7 | 9/2$^{(+)}$ | D | |
| 550.1 *3* | 32 *3* | 1266.6 | (13/2$^+$) | 716.5 | (11/2$^+$) | D+Q | −0.40 *15* |

Continued on next page (footnotes at end of table)

## $^{124}$Sn($^{6}$Li,3n$\gamma$) 1982Sh20 (continued)

### $\gamma(^{127}I)$ (continued)

| $E_\gamma$[†] | $I_\gamma$[†] | $E_i$(level) | $J_i^\pi$ | $E_f$ | $J_f^\pi$ | Mult.[‡] | $\delta$[#] |
|---|---|---|---|---|---|---|---|
| 593.4 *3* | 17 | 651.1 | $9/2^{(+)}$ | 57.67 | $7/2^+$ | D+Q | −0.95 *55* |
| 610.1 *4* | 21 *2* | 1876.8 | $(17/2^+)$ | 1266.6 | $(13/2^+)$ | Q | |
| 615.5 *10* | 20 *2* | 1266.6 | $(13/2^+)$ | 651.1 | $9/2^{(+)}$ | Q | |
| 651.8[@] *10* | 9[@] *2* | 651.1 | $9/2^{(+)}$ | 0.0 | $5/2^+$ | Q | |
| 651.8[@] *10* | 9[@] *2* | 2546.0 | $(19/2)^-$ | 1894.2 | $(15/2)^-$ | Q | |
| 658.9[@] *10* | 100[@] | 716.5 | $(11/2^+)$ | 57.67 | $7/2^+$ | Q | |
| 658.9[@] *10* | 100[@] *10* | 1894.2 | $(15/2)^-$ | 1235.3 | $(11/2)^-$ | Q | |
| 686.8 *5* | 8 *2* | 744.7 | $9/2^{(+)}$ | 57.67 | $7/2^+$ | D+Q | +0.30 *20* |
| 722.0 *10* | 2 *1* | 2072.0 | $(13/2^+)$ | 1350 | $(9/2^+)$ | | |
| 736.0 *10* | 2 *1* | 2412.0 | $(15/2^+)$ | 1675.6 | $(11/2^+)$ | | |
| 744.8 *3* | 34 *4* | 744.7 | $9/2^{(+)}$ | 0.0 | $5/2^+$ | Q | |
| 763.5 *3* | 68 *7* | 1480.1 | $(15/2^+)$ | 716.5 | $(11/2^+)$ | Q | |
| 880.1 *5* | 21 *2* | 2360.2 | $(19/2^+)$ | 1480.1 | $(15/2^+)$ | Q | |
| 933.5 *5* | 14 *2* | 2810.3 | $(21/2^+)$ | 1876.8 | $(17/2^+)$ | Q | |

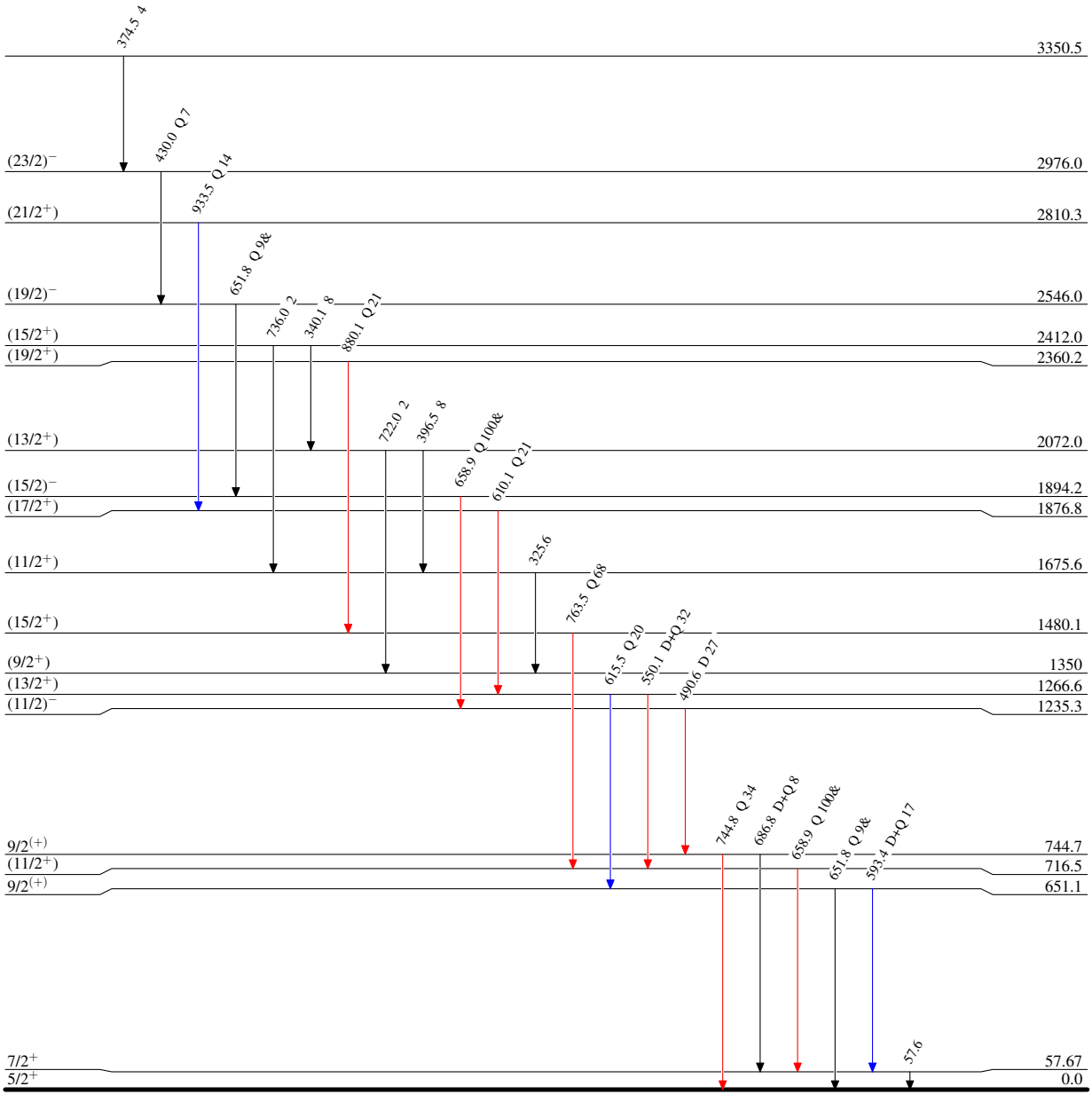
[†] From 1982Sh20.
[‡] From $\gamma(\theta)$ in 1982Sh20.
[#] From 1982Sh20.
[@] Multiply placed with undivided intensity.

## $^{124}$Sn($^{6}$Li,3n$\gamma$) 1982Sh20

### Level Scheme

Intensities: Relative $I_\gamma$
& Multiply placed: undivided intensity given

Legend
$I_\gamma < 2\% \times I_\gamma^{max}$
$I_\gamma < 10\% \times I_\gamma^{max}$
$I_\gamma > 10\% \times I_\gamma^{max}$




$^{127}_{53}I_{74}$