## $^{112}_{50}$Sn (Continued)

*J* Coulomb excitation (65Ro09, 70St20, 75Gr30, 76Wi10, 81Ba05, 81Jo03, 87Ra01)
*K* $^{113}$In(p,2nγ) (69Ya05)
*L* $^{114}$Sn(p,t) (70Fl08, 79BlZZ, 80Bl01)

*Levels and γ-ray branchings:*

**0**, 0$^+$, stable, *[ABCDEFGHIJKL]*
**1256.85** *7*, 2$^+$, 0.37 *2* ps, *[BCEGHIJKL]*, μ=+0.74 *26*, Q=−0.03 *11* $\gamma_{0}$***1257.05*** *8* (†$_\gamma$100) E2
**2151.09** *11*, 2$^+$, 1.4 *5* ps, *[BDGJ]* $\gamma_{1257}$***894.60*** *20* (†$_\gamma$100 *8*) $\gamma_{0}$***2151.00*** *20* (†$_\gamma$16.7 *11*) E2
**2190.9** *5*, 0$^+$, *[DGJL]* $\gamma_{1257}$***934.3*** *5* $\gamma_{0}$***2190.9*** *5* E0
**2247.62** *12*, 4$^+$, 3.3 *6* ps, *[BCEGHJKL]* $\gamma_{1257}$***990.70*** *14* (†$_\gamma$100) E2
**2354.53** *14*, 3$^-$, *[BEGHIJL]* $\gamma_{1257}$***1097.7*** *3* (†$_\gamma$100) E1
**2476.20** *12*, (2$^+$), *[BGJ]* $\gamma_{1257}$***1219.30*** *20* (†$_\gamma$27.6 *26*) $\gamma_{0}$***2475.90*** *20* (†$_\gamma$100 *7*)
**2521.05** *10*, 4$^+$, *[BEGHJL]* $\gamma_{1257}$***1264.18*** *8* (†$_\gamma$100) E2
**2549.30** *14*, 6$^+$, 13.7 *1* ns, *[CEGKL]*, μ=+0.534 *30*, Q=0.25 *2* $\gamma_{2248}$***301.68*** *7* (†$_\gamma$100) E2
**2556.6** *3*, ≤2, *[B]* $\gamma_{0}$***2556.6*** *3* (†$_\gamma$100)
**2618** *2*, 0$^+$, *[GL]*
**2721.56** *12*, 2$^+$, *[BGL]* $\gamma_{1257}$***1464.70*** *10* (†$_\gamma$100 *4*) $\gamma_{0}$***2721.3*** *7* (†$_\gamma$15.9 *13*)
**2756.19** *11*, 2$^+$,3,4$^+$, *[BG]* $\gamma_{2521}$***234.8*** *3* (†$_\gamma$5.9 *6*) $\gamma_{2476}$***279.50*** *20* (†$_\gamma$4.0 *3*) $\gamma_{2355}$***401.3*** *5* (†$_\gamma$2.6 *6*) $\gamma_{2151}$***605.10*** *20* (†$_\gamma$21.2 *13*) $\gamma_{1257}$***1499.50*** *10* (†$_\gamma$100.0 *28*)
**2783.92** *15*, 4$^+$, *[BEGHL]* $\gamma_{1257}$***1527.30*** *21* (†$_\gamma$100) E2
**2860** *5*, *[G]*
**2913.4** *3*, 4$^+$, *[BG]* $\gamma_{2521}$***392.3*** *4* (†$_\gamma$12.3 *14*) $\gamma_{1257}$***1656.7*** *6* (†$_\gamma$100 *5*)
**2917.71** *19*, *[B]* $\gamma_{2248}$***670.0*** *4* (†$_\gamma$100 *15*) $\gamma_{2151}$***766.80*** *20* (†$_\gamma$11.8 *8*)
**2926.78** *16*, 6$^+$, *[CEGL]* $\gamma_{2549}$***377.50*** *8* (†$_\gamma$100) M1
**2945.96** *12*, 4$^+$, *[BEG]* $\gamma_{1257}$***1688.95*** *11* (†$_\gamma$100)
**2967.00** *15*, 2$^+$, *[BGHL]* $\gamma_{2355}$***612.70*** *20* (†$_\gamma$28.4 *21*) $\gamma_{1257}$***1710.20*** *20* (†$_\gamma$100 *4*) $\gamma_{0}$***2966.3*** *3* (†$_\gamma$53 *4*)
**2989** *5*, 0$^+$, *[GL]*
**3078.87** *16*, 2$^+$,3,4$^+$, *[B]* $\gamma_{2248}$***831.1*** *4* (†$_\gamma$8.8 *19*) $\gamma_{2151}$***927.60*** *20* (†$_\gamma$97.3 *27*) $\gamma_{1257}$***1822.20*** *20* (†$_\gamma$100 *4*)
**3093.07** *17*, 2$^+$, *[BG]* $\gamma_{1257}$***1836.50*** *20* (†$_\gamma$100.0 *29*) $\gamma_{0}$***3092.4*** *3* (†$_\gamma$26.2 *19*)
**3118** *7*, *[G]*
**3137** *5*, 5$^-$, *[GL]*
**3149.41** *20*, 4$^+$, *[BGH]* $\gamma_{2248}$***900.8*** *5* (†$_\gamma$24 *7*) $\gamma_{1257}$***1892.70*** *20* (†$_\gamma$100.0 *30*)
**3248.81** *19*, 2$^+$, *[BGL]* $\gamma_{2476}$***772.80*** *20* (†$_\gamma$25.9 *19*) $\gamma_{2355}$***894.1*** *5* (†$_\gamma$27 *19*) $\gamma_{0}$***3248.1*** *4* (†$_\gamma$100 *6*)
**3278** *5*, 4$^+$, *[GL]*
**3286.39** *19*, 2$^+$, *[BG]* $\gamma_{1257}$***2029.70*** *20* (†$_\gamma$84 *5*) $\gamma_{0}$***3285.6*** *4* (†$_\gamma$100 *7*)
**3354.43** *16*, 7$^-$, *[CEGKL]* $\gamma_{2927}$***427.67*** *10* (†$_\gamma$5.83 *28*) E1 $\gamma_{2549}$***805.11*** *7* (†$_\gamma$100 *6*) E1
**3384.54** *19*, *[BG]* $\gamma_{2918}$***467.2*** *3* (†$_\gamma$16.1 *15*) $\gamma_{1257}$***2127.50*** *20* (†$_\gamma$100 *6*)
**3402** *5*, *[G]*
**3414.19** *13*, 6$^+$, *[E]* $\gamma_{2946}$***468.03*** *13* (†$_\gamma$32.0 *20*) E2 $\gamma_{2784}$***630.36*** *12* (†$_\gamma$56.0 *20*) E2 $\gamma_{2521}$***893.20*** *20* (†$_\gamma$38 *12*) E2 $\gamma_{2248}$***1166.9*** *3* (†$_\gamma$100 *10*) E2
**3417.77** *22*, 4$^+$, *[BGL]* $\gamma_{1257}$***2160.90*** *20* (†$_\gamma$100)
**3430.70** *17*, 8$^-$, 0.62 *4* ns, *[CEH]* $\gamma_{3354}$***76.3*** *2* (†$_\gamma$100) M1(+E2): δ=0.04 *3*
**3440** *7*, *[G]*
**3456.48** *21*, *[B]* $\gamma_{2756}$***700.3*** *6* (†$_\gamma$22 *5*) $\gamma_{1257}$***2199.60*** *20* (†$_\gamma$100 *6*)
**3477** *5*, *[GL]*
**3502** *7*, *[G]*
**3524.79** *19*, 2$^+$,3,4$^+$, *[BGL]* $\gamma_{3093}$***431.9*** *6* (†$_\gamma$9.2 *14*) $\gamma_{2248}$***1277.7*** *5* (†$_\gamma$22 *8*) $\gamma_{1257}$***2267.80*** *20* (†$_\gamma$100 *8*)
**3530.44** *16*, 2$^+$,3,4$^+$, *[BG]* $\gamma_{2521}$***1009.4*** *4* (†$_\gamma$84 *19*) $\gamma_{2248}$***1282.4*** *4* (†$_\gamma$65 *13*) $\gamma_{2151}$***1379.60*** *20* (†$_\gamma$100 *5*)
**3553.98** *22*, 2$^+$,3$^+$,4$^+$, *[BG]* $\gamma_{1257}$***2297.10*** *20* (†$_\gamma$100)
**3570**, 0$^+$, *[D]*
**3580** *5*, 4$^+$, *[G]*
**3611** *7*, *[G]*
**3624** *7*, (2$^+$), *[GL]*
**3654** *7*, 2$^+$, *[GL]*
**3693.73** *19*, 9$^-$, 47 *6* ps, *[CEG]* $\gamma_{3431}$***263.03*** *7* (†$_\gamma$100) M1
**3715**, *[L]*
**3737** *7*, *[G]*
**3756** *7*, *[G]*
**3773** *7*, *[GL]*
**3814.08** *14*, 2$^+$,3$^+$,4$^+$, *[BGL]* $\gamma_{3530}$***283.80*** *20* (†$_\gamma$2.59 *24*) $\gamma_{2913}$***900.8*** *5* (†$_\gamma$17 *3*) $\gamma_{2784}$***1029.6*** *7* (†$_\gamma$43 *3*) $\gamma_{2521}$***1293.6*** *7* (†$_\gamma$6 *3*) $\gamma_{2355}$***1459.50*** *10* (†$_\gamma$27.1 *12*) $\gamma_{2248}$***1566.40*** *20* (†$_\gamma$100.0 *24*)
**3832** *7*, *[G]*
**3857** *7*, *[G]*
**3877** *7*, *[GL]*
**3914** *7*, *[G]*
**3930**, *[L]*
**3988** *7*, *[G]*
**4031** *7*, *[G]*
**4048**, *[L]*
**4077.85** *15*, 8$^+$, *[EG]* $\gamma_{3414}$***663.66*** *8* (†$_\gamma$100) E2
**4105** *7*, *[GL]*
**4138** *7*, *[G]*
**4151** *7*, *[G]*
**4171** *7*, *[GL]*
**4193** *7*, *[G]*
**4222** *7*, *[G]*
**4239** *7*, *[GL]*
**4279** *7*, *[GL]*
**4325** *7*, *[GL]*
**4364** *7*, *[GL]*
**4402** *7*, *[G]*
**4437** *7*, *[G]*
**4461** *7*, *[GL]*
**4502** *7*, *[GL]*
**4544** *7*, *[G]*
**4571** *7*, *[G]*
**4582.64** *20*, 10$^-$, <21 ps, *[E]* $\gamma_{3431}$***1151.94*** *11* (†$_\gamma$100) E2
**4610** *7*, *[GL]*
**4629**, *[L]*
**4685** *7*, *[G]*
**4738** *7*, *[GL]*
**4757** *7*, *[GL]*
**4794** *7*, *[G]*
**4819.7** *3*, 10$^+$, *[EG]* $\gamma_{4078}$***741.80*** *20* (†$_\gamma$100) E2
**4825** *7*, *[G]*
**4850** *7*, *[G]*
**4887** *7*, *[G]*
**4928** *7*, *[G]*
**4929.0** *4*, 11$^-$, <21 ps, *[CEG]* $\gamma_{3694}$***1235.3*** *3* (†$_\gamma$100) E2
**5059** *7*, *[G]*
**5089** *7*, *[G]*
**5116** *7*, *[G]*
**5144** *7*, *[G]*
**5181** *7*, *[G]*
**5270** *7*, *[G]*
**5355** *7*, *[G]*
**5564.7** *4*, (12$^+$), *[E]* $\gamma_{4820}$***745.00*** *20* (†$_\gamma$100) (E2)
**5684.9** *3*, 12$^+$, *[E]* $\gamma_{4820}$***865.21*** *9* (†$_\gamma$100) E2

## $^{112}_{51}$Sb

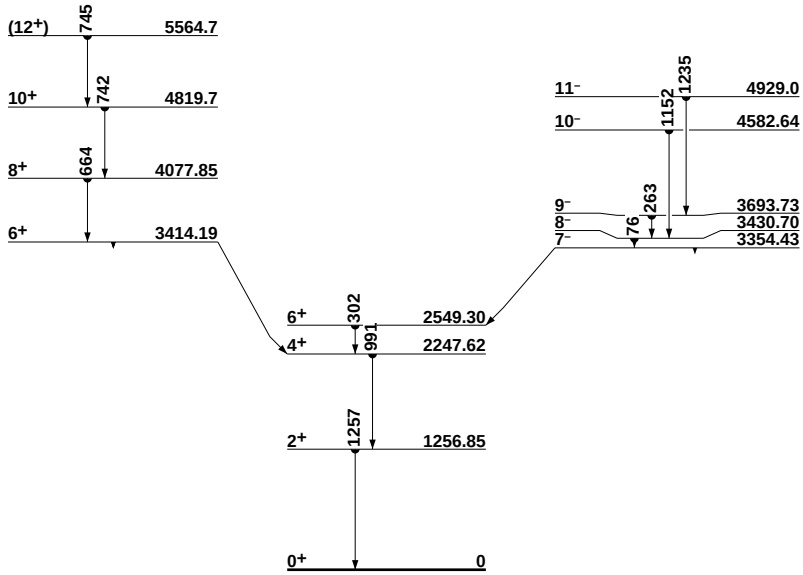
Δ: −81603 *23* **S$_n$**: (8830) **S$_p$**: 2949 *24* **Q$_{EC}$**: 7055 *23* **Q$_\alpha$**: 80 *30*

*Populating Reactions and Decay Modes*

*A* $^{112}$Te EC decay (75WiZX, 76Wi10, 76Wi11)
*B* $^{112}$Sn(p,nγ) (76Ka19, 76Ke07, 77KeZY)
*C* $^{115}$In($^3$He,6nγ) (76Ka19)

*Levels and γ-ray branchings:*

**0**, 3$^+$, 51.4 *10* s, *[AB]*, %EC+%β$^+$=100
**103.82** *22*, *[ABC]* $\gamma_{0}$***104.2*** *3* (†$_\gamma$100)
**166.8** *2*, (4), *[B]* $\gamma_{0}$***166.8*** *2* (†$_\gamma$100)
**236.56** *20*, (3), *[AB]* $\gamma_{104}$***132.90*** *20* (†$_\gamma$100 *17*) $\gamma_{0}$***236.4*** *4* (†$_\gamma$39 *9*)
**296.33** *18*, (1,2), *[AB]* $\gamma_{237}$***59.90*** *20* (†$_\gamma$5.2 *14*) $\gamma_{0}$***296.20*** *20* (†$_\gamma$100 *9*)
**340.1** *3*, (5,6), *[BC]* $\gamma_{104}$***236.6*** *2* (†$_\gamma$100)
**350.90** *20*(?), *[A]* $\gamma_{0}$***350.9*** *2* (†$_\gamma$100)
**357.1** *2*, (4,5), *[B]* $\gamma_{0}$***357.1*** *2* (†$_\gamma$100)
**372.70** *20*, (1$^+$), *[AB]* $\gamma_{0}$***372.70*** *20* (†$_\gamma$100)
**395.6** *3*, (5), *[B]* $\gamma_{167}$***228.8*** *2* (†$_\gamma$100)
**501.7** *3*, (4,5), *[B]* $\gamma_{104}$***398.2*** *2* (†$_\gamma$100)
**714.46** *21*, (1$^+$), *[AB]* $\gamma_{296}$***418.9*** *2* (†$_\gamma$100 *9*) $\gamma_{237}$***476.9*** *2* (†$_\gamma$25 *6*) $\gamma_{104}$***611.9*** *5* (†$_\gamma$8 *3*) $\gamma_{0}$***714.7*** *5* (†$_\gamma$4.2 *16*)
**796.4** *3*, (8$^-$), 0.56 *12* μs, *[BC]*, μ=+2.192 *8*, Q=0.71 *7* $\gamma_{340}$***456.3*** *2* (†$_\gamma$100)
**844.9** *4*(?), *[A]* $\gamma_{351}$***494.0*** *3* (†$_\gamma$100)
**973.2** *3*, *[B]* $\gamma_{502}$***471.5*** *3* (†$_\gamma$100)
**1170.1** *3*, *[B]* $\gamma_{973}$***196.9*** *3* (†$_\gamma$100)




$^{112}_{50}$Sn