

²⁰⁰Po ε decay 1978LiZM

| Type | Author | History Citation | Literature Cutoff Date |
|-----------------|--------------|------------------|------------------------|
| Full Evaluation | F. G. Kondev | NDS 192,1 (2023) | 1-Aug-2023 |

Parent: ²⁰⁰Po: E=0; J^π=0⁺; T_{1/2}=11.54 min 9; Q(ε)=3429 24; %ε+%β⁺ decay=88.7 4

1978LiZM and 1977LiZF: mass separated ²⁰⁰Po source following Ir(¹⁴N,xn) reaction; Measured: γ singles and γγ coin, E_γ, I_γ.

The decay scheme is incomplete and no log ft values and absolute γ-ray emission probabilities are presented.

²⁰⁰Bi Levels

| E(level) [†] | J ^π [‡] | T _{1/2} [‡] | Comments |
|-----------------------|-----------------------------|-------------------------------|---|
| 0 | 7 ⁺ | 36.4 min 5 | |
| 0+x | (2 ⁺) | 31 min 2 | Additional information 1. |
| 53.30+x 9 | | | |
| 430.20+x 10 | | | |
| 575.50+x 12 | | | |
| 671.00+x 8 | | | |
| 695.11+x 8 | | | |
| 818.60+x 12 | | | |
| 850.00+x 9 | | | |
| 876.08+x 11 | | | |
| 931.3+x 3 | | | |
| 999.01+x 10 | | | |
| 1127.00+x? 16 | | | |
| 1253.00+x 14 | | | |
| 1271.52+x 11 | | | |
| 1285.52+x 8 | | | |
| 1352.10+x? 19 | | | |
| 1387.50+x 15 | | | |
| 1401.50+x? 13 | | | |
| 1424.1+x 6 | | | |

[†] From a least-square fit to E_γ.

[‡] From Adopted Levels.

γ(²⁰⁰Bi)

| E _γ [†] | I _γ [†] | E _i (level) | E _f | J _f ^π | Comments |
|-----------------------------------|-----------------------------|------------------------|----------------|-----------------------------|---|
| 53.3 7 | 2.8 3 | 53.30+x | 0+x | (2 ⁺) | |
| 102.3 2 | 0.5 1 | 1387.50+x | 1285.52+x | | |
| 145.4 1 | 3.7 2 | 575.50+x | 430.20+x | | |
| 147.6 1 | 13.1 7 | 818.60+x | 671.00+x | | |
| ^x 151.8 [‡] 9 | 0.7 2 | | | | |
| 154.4 [#] 3 | 1.0 1 | 850.00+x | 695.11+x | | |
| 205.0 1 | 4.4 2 | 876.08+x | 671.00+x | | |
| 225.1 1 | 2.7 2 | 1352.10+x? | 1127.00+x? | | |
| 260.3 3 | 2.0 1 | 931.3+x | 671.00+x | | |
| 272.6 1 | 1.1 1 | 1271.52+x | 999.01+x | | |
| 328.1 1 | 7.7 4 | 999.01+x | 671.00+x | | |
| 395.4 1 | 1.2 1 | 1271.52+x | 876.08+x | | |
| ^x 421.9 2 | 4.0 6 | | | | |
| 430.3 1 | 14.0 7 | 430.20+x | 0+x | (2 ⁺) | |
| 434.4 1 | 27.3 14 | 1253.00+x | 818.60+x | | |
| ^x 488.4 2 | 1.0 2 | | | | |
| 492.8 5 | | 1424.1+x | 931.3+x | | E _γ : Seen only in γγ coincidence. |

Continued on next page (footnotes at end of table)

^{200}Po ε decay **1978LiZM (continued)** $\gamma(^{200}\text{Bi})$ (continued)

| E_γ^\dagger | I_γ^\dagger | $E_i(\text{level})$ | E_f | J_f^π | E_γ^\dagger | I_γ^\dagger | $E_i(\text{level})$ | E_f | J_f^π |
|--------------------|--------------------|---------------------|----------|-------------------|-------------------------|--------------------|---------------------|---------|-------------------|
| 551.5 1 | 5.8 3 | 1127.00+x? | 575.50+x | | $^x919.0^{\ddagger} 2$ | 0.8 1 | | | |
| 575.1 2 | 1.2 2 | 575.50+x | 0+x | (2 ⁺) | $^x932.0^{\ddagger} 1$ | 2.3 2 | | | |
| 582.0 2 | 1.6 3 | 1253.00+x | 671.00+x | | 945.7 1 | 3.2 3 | 999.01+x | 53.30+x | |
| 590.2 1 | 2.9 1 | 1285.52+x | 695.11+x | | $^x1003.3 2$ | 2.4 3 | | | |
| $^x599.7 3$ | 1.2 6 | | | | $^x1084.6 1$ | 11.2 6 | | | |
| 617.7 1 | 57.8 29 | 671.00+x | 53.30+x | | $^x1106.8^{\ddagger} 2$ | 1.9 2 | | | |
| $^x662.6 1$ | 3.3 2 | | | | $^x1145.7^{\ddagger} 3$ | 1.0 2 | | | |
| 671.0 1 | 100 5 | 671.00+x | 0+x | (2 ⁺) | $^x1165.2^{\ddagger} 1$ | 1.9 1 | | | |
| 692.0 2 | 1.9 5 | 1387.50+x | 695.11+x | | $^x1173.0^{\ddagger} 1$ | 3.2 2 | | | |
| 694.8 1 | 16.2 9 | 695.11+x | 0+x | (2 ⁺) | 1271.3 2 | 1.7 1 | 1271.52+x | 0+x | (2 ⁺) |
| $^x720.8 1$ | 2.4 2 | | | | 1285.8 1 | 3.4 2 | 1285.52+x | 0+x | (2 ⁺) |
| 730.5 1 | 3.1 2 | 1401.50+x? | 671.00+x | | 1387.8 4 | 3.0 3 | 1387.50+x | 0+x | (2 ⁺) |
| $^x756.0 3$ | 2.0 2 | | | | $^x1398.5^{\ddagger} 6$ | 1.1 2 | | | |
| $^x777.5 3$ | 1.5 1 | | | | $^x1408.6^{\ddagger} 2$ | 1.6 1 | | | |
| 796.7 1 | 23.1 12 | 850.00+x | 53.30+x | | $^x1438.4^{\ddagger} 2$ | 1.1 1 | | | |
| 818.8 | 1.7 2 | 818.60+x | 0+x | (2 ⁺) | $^x1560.6^{\ddagger} 2$ | 1.5 1 | | | |
| 850.0 1 | 14.5 8 | 850.00+x | 0+x | (2 ⁺) | $^x1651.7^{\ddagger} 1$ | 1.9 1 | | | |
| 876.5 3 | 5.3 3 | 876.08+x | 0+x | (2 ⁺) | $^x1750.4^{\ddagger} 1$ | 2.3 4 | | | |
| $^x895.9 1$ | 4.3 3 | | | | $^x1802.1^{\ddagger} 1$ | 3.7 3 | | | |
| $^x914.7 1$ | 3.4 2 | | | | | | | | |

[†] From 1978LiZM.

[‡] The assignment to ^{200}Po ε decay is uncertain.

Placement of transition in the level scheme is uncertain.

^x γ ray not placed in level scheme.

^{200}Po ϵ decay **1978LiZM**

Legend

- $I_\gamma < 2\% \times I_\gamma^{\max}$
- $I_\gamma < 10\% \times I_\gamma^{\max}$
- $I_\gamma > 10\% \times I_\gamma^{\max}$
- - - - -→ γ Decay (Uncertain)

Decay Scheme

Intensities: Relative I_γ

$0^+ \xrightarrow{Q_\epsilon=3429.24} 0$ 11.54 min 9
 $^{200}_{84}\text{Po}_{116}$
 $\% \epsilon + \% \beta^+ = 88.7$

