## $^{1}$H($^{72}$Ni,2p$\gamma$) 2020Lo06

History

| Type | Author | Citation | Literature Cutoff Date |
|---|---|---|---|
| Full Evaluation | Balraj Singh and Jun Chen | NDS 188,1 (2023) | 17-Jan-2023 |

2020Lo06: E=241 MeV/nucleon $^{72}$Ni secondary beam was produced by impinging a 345 MeV/nucleon $^{238}$U primary beam on a 3-mm-thick $^{9}$Be target, and delivered to the time projection chamber, MINOS. Fragments were separated and identified using the BigRIPS separator. Secondary target was liquid hydrogen with an effective thickness of 735 *8* mg/cm$^2$. Reaction products were identified with the ZeroDegree spectrometer according to ToF-B$\rho$-$\Delta$E. $\gamma$ rays were detected with the DALI2 array consisting of 186 NaI(Tl) crystals. Measured E$\gamma$, I$\gamma$, $\gamma\gamma$-coin. Deduced levels. Comparisons with shell-model calculations.

### $^{71}$Co Levels

Inclusive cross section=9.7 mb *6*, including exclusive $\sigma$=1.5 mb *6* for 246$\gamma$ (2020Lo06).

| E(level)[†] | J$^\pi$[‡] | Comments |
|---|---|---|
| 0 | (7/2$^-$) | Exclusive $\sigma$<6.6 mb *17*. |
| 892 *20* | (9/2$^-$) | Exclusive $\sigma$=0.0 mb *10*. |
| 1817 *34* | (7/2$^-$) | Exclusive $\sigma$=1.6 mb *8*. |

[†] From E$\gamma$ data.
[‡] Proposed by 2020Lo06 based on shell-model predictions.

### $\gamma$($^{71}$Co)

| E$_\gamma$[†] | I$_\gamma$[†] | E$_i$(level) | J$_i^\pi$ | E$_f$ | J$_f^\pi$ | Comments |
|---|---|---|---|---|---|---|
| [x]246 *16* | 100 *34* | | | | | E$_\gamma$: No $\gamma$ observed in coincidence with 246$\gamma$; it is suggested that this transition belongs to a deformed band (2020Lo06). |
| 892 *20* | 93 *54* | 892 | (9/2$^-$) | 0 | (7/2$^-$) | |
| 925 *27* | 88 *56* | 1817 | (7/2$^-$) | 892 | (9/2$^-$) | |

[†] From 2020Lo06.
[x] $\gamma$ ray not placed in level scheme.

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Level Scheme

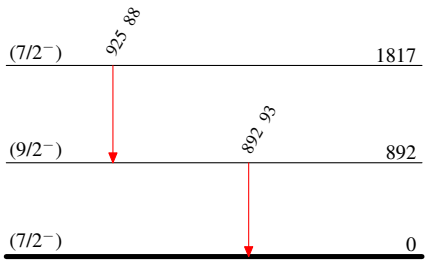
Intensities: Relative $I_\gamma$

Legend

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

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

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




$^{71}_{27}Co_{44}$