Adopted Levels

History				
Туре	Author	Citation	Literature Cutoff Date	
Full Evaluation	Balraj Singh	ENSDF	31-Jul-2014	

 $Q(\beta^{-})=15220 SY; S(n)=2600 SY; S(p)=16010 SY; Q(\alpha)=-14760 SY$ 2012Wa38

Estimated uncertainties (2012Wa38): 600 for $Q(\beta^{-})$, 720 for S(n), 1000 for S(p) and $Q(\alpha)$.

 $S(2n)=8080\ 780,\ Q(\beta^-n)=8930\ 600\ (syst,2012Wa38).\ S(2p)=36030\ (1997Mo25,calculated).$

1997Be70, 1995En07: ⁸⁰Cu produced and identified in ⁹Be(²³⁸U,F), E=750 MeV/nucleon; measured production sigma, residuals fission yields. Fully-stripped fission product separation using fragment separator, tof.

- 2010Ho12: ⁸⁰Cu produced in ⁹Be(⁸⁶Kr,X) reaction at E=140 MeV/nucleon; fully-ionized ⁸⁶Kr beam, A1900 fragment separator at NSCL facility using $B\rho$ - Δ E-B ρ method. After separation, the mixed beam was implanted into the NSCL β -counting system (BCS) consisting of stacks of Si PIN detectors, a double-sided Si strip detector (DSSD) for implantation of ions, and six single-sided Si strip detectors (SSSD) followed by two Si PIN diodes. The identification of each implanted event was made from energy loss, time-of-flight information and magnetic rigidity. The implantation detector measured time and position of ion implantations and β decays. Neutrons were detected with NERO detector. Measured β and β n-correlated events with ion implants; half-life of ⁸⁰Cu.
- 2014Xu07: ⁸⁰Cu nuclide produced in ⁹Be(²³⁸U,F) reaction with a ²³⁸U⁸⁶⁺ beam of 345 MeV/nucleon produced by the RIKEN accelerator complex. Separation of ⁸⁰Cu nuclei was made on the basis of magnetic rigidity, time-of-flight and energy loss of the fragments (ΔE -B ρ -tof method) using BigRIPS fragment separator and and ZeroDegree Spectrometer (ZDS) at RIBF-RIKEN facility. Based on A/Q spectrum and Z versus A/Q plot. Measured heavy fragment, β and γ spectra using wide-range active silicon strip stopper array (WAS3ABi) for beta and ion detection, and EUROBALL-RIKEN Cluster array for γ detection. Decay curves were obtained from time differences between implantation and correlated β decays.

2003Bo06: theoretical calculation of half-life, $\%\beta^-n$. Additional information 1.

⁸⁰Cu Levels

E(level)	T _{1/2}	Comments
0	113.6 ms +82-38	 %β⁻=100; %β⁻n=?; %β⁻2n=? Only β⁻ decay mode has been observed by 2010Ho12 and 2014Xu07. E(level): the observed activity is assumed to be in its ground state. J^π: 1/2⁻ neutron orbital and 1/2⁻ proton orbital in theoretical calculations (1997Mo25). T_{1/2}: weighted average of 113.3 ms 64 (2014Xu07) and 0.17 s ¹¹⁻⁵ (2010Ho12). In 2014Xu07, T_{1/2} is from βγ-coin decay curve. In 2010Ho12, T_{1/2} is from measurement of time sequence of decay type events correlated with the implanted nuclei (of ⁸⁰Cu) in Si detectors, using method of maximum likelihood analysis which required, as input parameters, values of β-detection efficiency, background, half-lives of daughter and granddaughter nuclei and experimental or theoretical values of %β⁻n of all nuclei involved. In 2010Ho12, a total of 16 implants were detected, and no correlated βn coincidences were observed.