

Adopted Levels

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	Alexandru Negret, Balraj Singh		NDS 114, 841 (2013)	30-Jun-2013

$Q(\beta^-)=10230$ SY; $S(n)=3860$ SY; $S(p)=19070$ SY; $Q(\alpha)=-15670$ SY [2012Wa38](#)

$S(2n)=10280$ 300, $S(2p)=36210$ 760, $Q(\beta^-n)=3690$ 300 (syst,[2012Wa38](#)).

Estimated uncertainties ([2012Wa38](#)): 300 for $Q(\beta^-)$, 500 for $S(n)$, 670 for $S(p)$ and $Q(\alpha)$.

[1998Am04](#) (also [1995AmZY](#),[1992WeZX](#)): ^{75}Ni identified after the $^9\text{Be}(^{86}\text{Kr},X)$ reaction at $E=500$ MeV/nucleon with a 2 g/cm² target. $B\rho$ - ΔE -tof technique used, β particles detected.

[2010Ho12](#) (also [2005Ho08](#)): ^{75}Ni identified in the $^9\text{Be}(^{86}\text{Kr},X)$ reaction at $E=140$ MeV/nucleon with a 376 g/cm² target.

Fully-ionized ^{86}Kr beam, A1900 fragment separator at NSCL facility using $B\rho$ - ΔE - $B\rho$ 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 βn -correlated events with ion implants, half-life of ^{75}Ni and delayed-neutron emission probability. A total of 1905 implants were detected, and 43 correlated βn coincidences were observed.

Theoretical calculations (half-life, $\% \beta^- n$): [1989Kr02](#), [2002Gr16](#), [2005Gr29](#), [2005Bo19](#), [2008Ma17](#).

 ^{75}Ni Levels

E(level)	$T_{1/2}$	Comments
0.0	344 ms 25	$\% \beta^- = 100$; $\% \beta^- n = 10.0$ 28 (2010Ho12) $T_{1/2}$: from measurement of time sequence of decay type events correlated with the implanted nuclei (of ^{75}Ni) in Si detectors (2010Ho12). The authors used 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 $\% \beta^- n$ of all nuclei involved. Others: 344 ms +20-24 (2005Ho08 , previous result from 2010Ho12), 0.6 s 2 (1998Am04). J^π : $7/2^+$ proposed from systematics (2012Au07) and theory (1997Mo25). Shell-model calculations quoted in 2005Gr29 (also 2010RaZY) support $9/2^+$ for $^{69,71,73,75}\text{Ni}$ isotopes.