Adopted Levels

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Jun Chen and Balraj Singh	NDS 157, 1 (2019)	15-Apr-2019

S(n)=20390 *SY*; S(p)=1530 *SY*; Q(α)=−7460 *SY* 2017Wa10

Estimated ΔS(n)=780, ΔS(p)=ΔQ(α)=710 (2017Wa10).

Q(εp)=13340 *500*, S(2n)=37060 *710*, S(2p)=700 *640* (syst,2017Wa10). Q(ε2p)=10598 *500* (syst, deduced by evaluator from mass excesses in 2017Wa10).

1994Bl10: first identification of ^{50}Ni isotope. Fragmentation reaction used to produce ^{50}Ni isotope at GSI facility. Primary beam: ^{58}Ni at 650 MeV/nucleon; target:^{9}Be. Fragment separator: FRS at GSI.

2003Ma34: fragmentation reaction used to produce ^{50}Ni isotope at GSI facility. Primary beam: ^{58}Ni at 650 MeV/nucleon; target=^{9}Be. Fragment separator: FRS at GSI. Fragments implanted in a telescope of eight Si detectors and identified by charge and charge/mass ratio, including time-of-flight method. Measured βp spectra following fragment implantation, half-life and delayed proton branch. This work is from the same laboratory as 1994Bl10.

2007Do17: fragmentation reaction used to produce ^{50}Ni isotope at SISSE/LISE3 facility in GANIL. Primary beam: $^{58}Ni^{26+}$ at 74.5 MeV/nucleon; target=natural Ni. Fragment separator=α−LISE3. Identification by energy loss, residual energy and time-of-flight measurements using two micro-channel plate (MCP) detectors and Si detectors. Double-sided silicon-strip detectors (DSSSD) and a thick Si(Li) detector were used to detect implanted events, charged particles and β particles. γ rays were detected by Ge detectors. Coincidences measured between charged particles, β rays and γ rays.

Theory references: consult the NSR database (www.nndc.bnl.gov/nsr/) for 30 primary references dealing with various aspects of nuclear structure.

Additional information 1.

^{50}Ni Levels

E(level)	J^π	$T_{1/2}$	Comments
0	0^+	18.5 ms *12*	%ε+%β^+=100; %εp=73 *6* (2007Do17); %ε2p=14 *5* $T_{1/2}$: from 2007Do17, measured by time correlation of implantation events due to ^{50}Ni and subsequent emission of protons. Other: 12 ms *+3−2* (2003Ma34). Weighted average of two values of half-lives is 17.3 ms *25* with a χ^2=5.5, whereas unweighted average is 15.3 ms *32*. %εp=86.7 *39* is total delayed proton branch in 2007Do17 from time spectrum of events with energy >900 keV in the charged-particle spectrum, out of which 14% *5* seems associated with ε2p branch, from the observed intensity of 1972 proton group in 2007Do17. Possible small contribution from delayed-α is ignored. Other %εp=70 *20* (2003Ma34). Production σ=0.061 nb *+33−30* (1994Bl10).