^{130}Eu p decay (0.90 ms)   2004Da04

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Janos Timar and Zoltan Elekes, Balraj Singh	NDS 121, 143 (2014)	31-May-2014

Parent: ^{130}Eu: E=0; J^π=(1$^+$); T$_{1/2}$=0.90 ms +49−29; Q(p)=1028 15; %p decay≈100.0

^{130}Eu-E: It is assumed that the observed activity corresponds to the g.s.

^{130}Eu-T$_{1/2}$: From timing of proton spectra (2004Da04).

^{130}Eu-J$^\pi$: Proposed configuration=π3/2[411]⊗ν1/2[411], K^π=1$^+$,2$^+$ with preference for K^π=1$^+$ from Gallagher-Moszkowski rules.

^{130}Eu-Q(p): From E(p)=1020 15 (2012Wa38).

^{130}Eu-%p decay: %p ≈ 100 from half-life measured by 2004Da04 and calculated β decay half-life of 49 ms (1997Mo25).

2004Da04 (also 2005Se21,2002Ma61): ^{130}Eu produced in ^{58}Ni(^{78}Kr,p5n) reaction at E(^{78}Kr)=425 MeV, ATLAS accelerator facility. Recoil fragments were analyzed using Argonne Fragment Mass Analyzer (FMA) and implanted into a double-sided silicon strip (DSSSD) detector. Other detectors used were a large silicon detector to veto positron and β delayed proton events and an array of four silicon detectors to veto events for particles emerging from the front surface of the DSSSD detector. Measured proton spectra, isotopic half-life and production cross section. Structure calculations were used to deduce deformation and probable configuration.

1983La27: search for ^{130}Eu proved negative in ^{92}Mo(^{58}Ni,X) reaction.

Additional information 1.

^{129}Sm Levels

E(level)	J^π	T$_{1/2}$	Comments
0	(1/2$^+$,3/2$^+$)	0.55 ms 10	J^π,T$_{1/2}$: from Adopted Levels.

Protons (^{129}Sm)

E(p)	E(^{129}Sm)	I(p)	Comments
1020 15	0	100	E(p): measured by 2004Da04.