Adopted Levels

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	K. Auranen and E. A. Mccutchan	NDS 168, 117 (2020)	1-Aug-2020

Q(β^-)=−9480 *80*; S(n)=9870 *70*; S(p)=2380 *50*; Q(α)=7958 *5* 2017Wa10
S(2n)=18091 *21*; S(2p)=2910 *14*; Q(εp)=3990 *13* (2017Wa10).

1980Ve01: ^{212}Th produced in ^{176}Hf(^{40}Ar,4n) reaction with E(^{40}Ar)=179 MeV. Separation using the velocity filter SHIP. Measured Eα, implant-α(t).

2010He25: ^{212}Th produced in ^{152}Sm(^{64}Ni,4n) reaction with E(^{64}Ni)=288 MeV from the UNILAC at GSI. Separation using the velocity filter SHIP followed by implantation into a position-sensitive silicon detector. Measured Eα, $\alpha\alpha$ correlations, implant-α(t) using position-sensitive silicon strip detector surrounded by six silicon detectors in a box-like arrangement. Total of 1430 evaporation residue-α events were observed for ^{212}Th.

2015Ma37: ^{216}U activity from ^{180}W(^{40}Ar,4n) reaction with E(^{40}Ar)=189.5 MeV from the Sector-Focusing Cyclotron facility at HIRFL-Lanzhou. Fragments separated with gas-filled recoil separator for heavy ions (SHANS). Measured Eα, $\alpha\alpha$ correlations, implant-α(t) using position-sensitive silicon strip detector surrounded by eight silicon detectors in a box-like arrangement. Six correlated decay chains were observed for the ground state of ^{216}U and two correlated decay chains were observed for an isomeric level in ^{216}U. Results also presented in 2016Zh33.

2015De22: ^{216}U activity from deep-inelastic multinucleon transfer reaction ^{248}Cm(^{48}Ca,X), with E(^{48}Ca)=270 MeV from UNILAC at GSI. Fragments separated with velocity filter SHIP at GSI and implanted in position-sensitive silicon strip detector. Measured Eα, $\alpha\alpha$ correlations, implant-α(t) using silicon strip detector surrounded by six silicon detectors in a box-like arrangement. ^{216}U decay chain was identified in one sequence of three successive α decays.

^{212}Th Levels

Cross Reference (XREF) Flags

A ^{216}U α decay (4.5 ms)
B ^{216}U α decay (0.7 ms)

E(level)	J^π	$T_{1/2}$	XREF	Comments
0.0	0^+	31.7 ms *13*	AB	%α≈100 %α: only α decay has been observed. Other: %ε+%β^+ branch is predicted to be < 0.3% based on experimental half-life and theoretical β-decay half-life of 11 s from 2019Mo01. $T_{1/2}$: from implant-α(t) (2010He25) based on 1430 events. Others: 30 ms *+20−10* (1980Ve01), 173 ms *+398−143* (2015De22), 27.8 ms *+506−110* and 21.5 ms *+215−72* (2015Ma37). Measured Eα=7809 *5* (2010He25) from decay of ^{212}Th to ^{208}Ra; assumed to be a g.s. to g.s. transition. Others: 7830 *20* (2015De22), 7788 *30* and 7806 *30* from decay of two activities in ^{216}U (2015Ma37).