Adopted Levels

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	F. G. Kondev	NDS 196,342 (2024)	1-Sep-2023

S(n)=10933 *25*; S(p)=1803 *18*; Q(α)=7880 *7* 2021Wa16
S(2p)=1503 *16*, Q(εp)=5893 *18* (2021Wa16).

2014Ka23: ^{202}Ra produced using the ^{149}Sm(^{56}Fe,3n) reaction, E(^{56}Fe)=249 MeV. Target=370 μg/cm^2-thick enriched to 96.9% in ^{149}Sm, with 40μg/cm^2-thick carbon backing and covered with a 10 μg/cm^2-thick layer of carbon, and mounted on a rotating wheel. Detectors: SHIP recoil separator, 16-strip position sensitive Si detectors (PSSD), six Si strip detectors to detect escaping α particles and one HPGe clover detector behind the PSSD. Measured: recoil-α-α-α(t) coincidences. Sixteen quadruple (recoil-α_1-α_2-α_3) events: 7722 keV (α_1, ^{202}Ra), 7198 keV (α_2, ^{198}Rn) and 6846 keV (α_3, ^{194}Po) were observed.

2005Uu02: ^{202}Ra was produced by ^{141}Pr(^{63}Cu,2n) with 1 mg/cm^2 target and 278 to 288-MeV beam at JYFL. Reaction products were separated by the RITU gas-filled separator, and implanted into a position-sensitive Si detector. Measured: recoil-α-α-α(t) coincidences. One quadruple (recoil-α_1-α_2-α_3) event 7740 keV (α_1, ^{202}Ra), 2285 keV (escaped α_2, ^{198}Rn) and 6843 keV (α_3, ^{194}Po) was observed.

1996Le09: ^{202}Ra was produced by ^{170}Yb(^{36}Ar,4n) with 360 μg/cm^2 target (72% ^{170}Yb, 18% ^{171}Yb, 5% ^{172}Yb and <3% ^{168}Yb, ^{173}Yb, ^{174}Yb and ^{176}Yb each) and 201-MeV beam at JYFL. Reaction products were separated by the RITU gas-filled separator and implanted into a position-sensitive Si detector. One quadruple (recoil-α_1-α_2-α_3) (Eα_2, Eα_3 missing) event 7860 keV *60* (α_1, ^{202}Ra) was observed. The assignment to ^{202}Ra decay is tentative.

^{202}Ra Levels

E(level)	J$^\pi$	T$_{1/2}$	Comments
0	0$^+$	3.8 ms *+13−8*	%α=100 T$_{1/2}$: From 7727α(t) in 2014Ka23. Others: 16 ms *+30−7* 2005Uu02 and 0.7 ms *+33−3* (1996Le09). Eα=7727 keV *7* (2014Ka23), 7740 keV *20* (2005Uu02) and 7860 keV *60* (1996Le09).