^{166}Ir α decay (10.5 ms) 1997Da07

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	N. Nica	NDS 195,1 (2024)	19-Sep-2023

Parent: ^{166}Ir: E=0.0; J^π=(2$^-$); $T_{1/2}$=10.5 ms *22*; Q(α)=6722 *6*; %α decay=93.1 *29*

^{166}Ir-E: Additional information 1.

^{166}Ir-J^π: Additional information 2.

^{166}Ir-$T_{1/2}$: Additional information 3.

^{166}Ir-Q(α): Additional information 4.

^{166}Ir-%α decay: From measured proton and α intensities, assuming negligible $\varepsilon+\beta^+$ branching.

Additional information 5.

All data are from 1997Da07, unless noted otherwise.

^{166}Ir produced in the ^{92}Mo(^{78}Kr,p3n) reaction, with E(^{78}Kr)=384 MeV. Enriched (>97% ^{92}Mo) target of thickness 580 μg/cm^2, presumably evaporated onto a 700 μg/cm^2 Al backing. The recoil nuclei were separated according to their mass-to-charge ratio in the Fragment Mass Analyzer at the ATLAS accelerator facility. After passing through a thin position-sensitive parallel-grid avalanche counter, located at the focal plane of the analyzer, the recoils were implanted into a double-sided silicon-strip detector. Both position and time correlations between the recoils and their decay products were measured, as well as energies and intensities of their emitted radiations. Results include $T_{1/2}$, E(p), %p, Eα, %α.

^{162}Re Levels

E(level)	J^π	$T_{1/2}$	Comments
0.0	(2$^-$)	107 ms *13*	J^π: unhindered α transition from a (2$^-$) level in ^{166}Ir.

α radiations

Eα	E(level)	Iα[‡]	HF[†]
6562 *6*	0.0	100	1.7 *4*

[†] The nuclear radius parameter r_0(^{162}Re)=1.5562 *69* is deduced from interpolation (or unweighted average) of radius parameters of the adjacent even-even nuclides.

[‡] For absolute intensity per 100 decays, multiply by 0.931 *29*.