

^{206}Fr α decay (16 s) [1992Hu04,2016Ly01](#)

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

Parent: ^{206}Fr : E=200 40; $J^\pi=7^+$; $T_{1/2}\approx 16$ s; $Q(\alpha)=6923$ 3; % α decay=84.7 15

^{206}Fr -E: From [2021Ko07](#).

^{206}Fr - J^π : From [2015Vo05](#) and [2016Ly01](#); π from μ .

^{206}Fr - $T_{1/2}$: From [2008Ko21](#).

^{206}Fr - $Q(\alpha)$: From [2021Wa16](#).

^{206}Fr -% α decay: From [2016Ly01](#).

[1992Hu04](#): ^{206}Fr was produced in $^{\text{nat}}\text{Ir}(^{20}\text{Ne},\text{xn})$ and $^{181}\text{Ta}(^{32}\text{S},2\text{p}5\text{n})$ reactions, and separated at the Leuven Isotope Separator On-Line (LISOL) facility. Recoils were implanted into a Mylar tape that periodically moved the source from the implantation station to the decay station. Detectors: 2 Ge and 1 Ge LEPS (γ rays), 1 Si(Li) (CE), several surface-barrier and PIPS detectors (α particles). Measured: $\alpha\gamma(t)$ and α -X(t).

[2016Ly01](#): ^{206}Fr was produced in the bombardment of 1.4 GeV protons on a Uranium carbide target at the ISOLDE-CERN facility. Recoils were selected by a high-resolution mass separator, injected into the ISCOOL cooler and buncher, resonantly excited with pulsed laser beams and implanted on a thin ($20\ \mu\text{g}/\text{cm}^2$) C foil. Alpha particles were measured using PIPS detectors.

Others: [1961Gr42](#), [1964Gr04](#), [1967Va20](#), [1974Ho27](#) and [1981Ri04](#).

 ^{202}At Levels

E(level)	J^π^\dagger	$T_{1/2}^\dagger$
0	3^+	184 s 1
190 40	7^+	182 s 2

† From Adopted Levels.

 α radiations

E_α	E(level)	I_α^\ddagger	HF †	Comments
6790 3	190	≈ 100	≈ 2.5	E_α : From 1991Ry01 , based on adjustment of the 6792 keV 5 (1967Va20), 6785 keV 5 (1974Ho27) and 6790 keV 5 (1981Ri04) values. Others: 6920 keV 20 (1964Gr04), 6740 keV (1961Gr42) and 6792 keV 5 (1992Hu04).

† $t_0(^{202}\text{At})=1.507$ 8, unweighted average of 1.5026 13 (^{200}Po), 1.4917 27 (^{202}Po), 1.5287 42 (^{202}Rn) and 1.5029 39 (^{204}Rn) from [2020Si16](#).

‡ For absolute intensity per 100 decays, multiply by 0.847 15.