^{9}Be(^{208}Pb,Xγ) 2014Ku23,2011St21,2005Ca02

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Huang Xiaolong and Kang Mengxiao	NDS 133, 221 (2016)	1-Dec-2015

2005Ca02: Projectile fragmentation of ^{208}Pb beam at 1 GeV/nucleon. Fragment Recoil Separator (FRS) used to identify ^{198}Ir nuclide. RISING γ-ray spectrometer. Measured Eγ, Iγ, and $\gamma\gamma$, $\gamma\gamma$(t) using four "Clover" type Ge detectors (providing 16 independent Ge crystals). The experimental setup also included two multi-wire proportional counters, for position measurements; two scintillation detectors, providing time-of-flight and position information; and a further two scintillators and an ionization chamber (MUSIC) for energy loss measurements. For each Ge crystal, the energy and time of the first γ-ray event was recorded after the arrival of a heavy ion, up to a maximum time of 75 μs.

2011St21: ^{198}Ir nuclide formed by in-flight fragmentation of ^{208}Pb beam at 1 GeV/nucleon from the GSI UNILAC and SIS-18 accelerator complex. Beam was fully-stripped or mixture of H- or He-like nuclei. Target thickness=2.526 g/cm^2, backed by ^{93}Nb foil of thickness=0.223 g/cm^2. Fragments identified in flight by the FRS operated in achromatic mode based on time of flight, Bρ and energy loss. Transmitted ions slowed in Al degraders and stopped in a plastic catcher. The stopper was surrounded by the RISING γ-ray spectrometer. Measured Eγ, Iγ, delayed γ-rays, isomer lifetime. Beam was fully-stripped or mixture of H- or He-like nuclei.

2014Ku23, 2009Ku28, 2007KuZW: ^{198}Ir produced at GSI via the reaction Be(^{208}Pb,X) at a beam energy of 1 GeV/nucleon. Identified in FRS based on energy loss, time of flight and magnetic rigidity. Nuclei implanted into an array of four double-sided silicon strip detectors. Measured β decay half-life of g.s.

^{198}Ir Levels

E(level)	$T_{1/2}$	Comments
0	8 s *2*	E(level): The observed fragments are assumed to be in the ground state of ^{198}Ir nuclei (2014Ku23). $T_{1/2}$: From time correlations between implantations and β decay events (2014Ku23).
116.4? *2*	77 ns *9*	$T_{1/2}$: The value given for the half-life of this isomer is for ions of ^{198}Ir at rest, measured at the final focus of the FRS (2005Ca02). Other: 73 ns *11* from decay curve of 116-keV transition (2011St21).

γ(^{198}Ir)

Eγ	Iγ	E$_i$(level)	E$_f$	Mult.	$\alpha^{\dagger}$	Comments
116.4 *2*	481 *30*	116.4?	0	[E1]	0.271	Eγ: From 2005Ca02. Iγ: Arbitrary units. The values are efficiency-corrected counts, in the obtained γ-ray spectra with arbitrary overall normalization (2005Ca02). Mult.: Hindrance factors suggest that if the 116 transition is directly depopulating an isomer, it is likely to have E1 multipolarity, which is supported by the lack of observed x-ray events by 2005Ca02. 2011St21 also report Eγ=116.4 *5*, on his intensity scale, Iγ=100 *17*. This γ-ray de-excites a 73 ns *11* isomer, but the level scheme is unknown, so not placed in level scheme.

† Total theoretical internal conversion coefficients, calculated using the BrIcc code (2008Ki07) with Frozen orbital approximation based on γ-ray energies, assigned multipolarities, and mixing ratios, unless otherwise specified.

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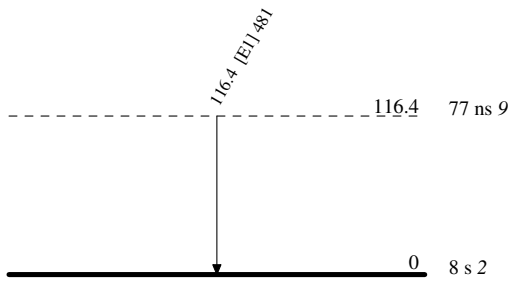
Level Scheme

Intensities: Relative I_γ



$^{198}_{77}Ir_{121}$