

**Coulomb excitation 2014Ma85**

Type	History		Literature Cutoff Date
	Author	Citation	
Full Evaluation	Balraj Singh	ENSDF	31-Mar-2017

**2014Ma85:**  $^{74}\text{Ni}$  beam at 95.8 MeV/nucleon produced in fragmentation of 140 MeV/nucleon  $^{86}\text{Kr}$  beam with a 399 mg/cm<sup>2</sup> thick  $^9\text{Be}$  target at Coupled cyclotron facility at NSCL-MSU, followed by A1900 fragment separator and S-800 magnetic spectrograph for identification of fragments by energy loss and time-of-flight technique.

Coulomb excitation target=642 mg/cm<sup>2</sup> thick  $^{197}\text{Au}$ .

Measured Doppler-corrected  $\gamma$ -ray spectra correlated with incoming and outgoing particles, with the selection of scattering angle consistent with safe Coulomb excitation. The CAESAR array of 192 CsI(Na) scintillators was used for  $\gamma$  detection. Deduced B(E2) for the first  $2^+$  state, and compared to large-scale shell model calculations, and results for first  $2^+$  states in N=40-50 even-A Ni isotopes.

 $^{74}\text{Ni}$  Levels

E(level)	$J^\pi$	$T_{1/2}$	L	Comments
0	$0^+$			
1024	$2^+$	3.9 ps	$+2I-1$	0 B(E2) $\uparrow$ =0.064 +22-23 (2014Ma85) B(E2) deduced by 2014Ma85 from measured angle-integrated cross section for $0^+$ to $2^+$ excitation=148 mb +50-52, and using DWEIKO computer code to translate this cross section into B(E2) value. 2014Ma85 quote B(E2) in e <sup>2</sup> fm <sup>4</sup> units, whereas here it is listed in e <sup>2</sup> b <sup>2</sup> units as in ENSDF database. $T_{1/2}$ : deduced by evaluator from B(E2) value in 2014Ma85.

 $\gamma(^{74}\text{Ni})$ 

$E_\gamma$	$E_i(\text{level})$	$J_i^\pi$	$E_f$	$J_f^\pi$	Comments
1024	1024	$2^+$	0	$0^+$	$E_\gamma$ : from Adopted Gammas.

**Coulomb excitation 2014Ma85**Level Scheme