

Coulomb excitation 2024He01,1998Ib01

Type	Author	History Citation	Literature Cutoff Date
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2024He01: $^{196}\text{Pt}(^{32}\text{Si}, ^{32}\text{Si}'\gamma)$ $E=3.5$ MeV/nucleon ^{32}Si beam was produced from the ReA6 facility at NSCL. Target was 1.59 mg/cm² ^{196}Pt . γ rays were detected with the SeGA array consisting of 16 HPGe detectors and charged particles were detected with the JANUS setup consisting of a pair of S3-type annular double-side Si detectors. Measured E_γ , I_γ , γ -ray yields. Deduced γ -ray transition strength, spectroscopic quadrupole moment. Comparisons with available data and theoretical calculations. Coulomb excitation yields were analyzed with the GOSIA code.

1998Ib01: $^{197}\text{Au}(^{32}\text{Si}, ^{32}\text{Si}'\gamma)$ $E=37.4$ MeV/nucleon ^{32}Si secondary beam was produced by fragmentation of a 80 MeV/nucleon ^{40}Ar primary beam from the K1200 cyclotron on a 356 mg/cm² ^9Be production target at NSCL. The reaction target was a 184 mg/cm² ^{197}Au . Scattered particles were detected with a fast/slow plastic phoswich detector and γ rays were detected with an array of 39 cylindrical NaI(Tl) detectors. Measured E_γ , I_γ , particle- γ -coin. Deduced $B(E2)$ for the first 2^+ level.

 ^{32}Si Levels

E(level)	J^π [†]	Comments
0	0^+	
1930 31	2^+	$B(E2)\uparrow=0.0143$ 20 (2024He01); $B(E2)\uparrow=0.0113$ 33 (1998Ib01) $Q=0.11$ 10 (2024He01) Cross section=22 mb 6 (1998Ib01). $\langle 0^+ E2 2^+\rangle=0.120$ eb 8 (2024He01). $\langle 2^+ E2 2^+\rangle=0.14$ eb 13 (2024He01).

[†] From Adopted Levels.

 $\gamma(^{32}\text{Si})$

E_γ	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Mult.	Comments
1930 31	1930	2^+	0	0^+	[E2]	E_γ : from 1998Ib01.

Coulomb excitation 2024He01,1998Ib01Level Scheme