^{2}H(^{24}Ne,pγ),(^{26}Ne,^{25}Neγ) 2010Ca10,2007Fe09,2006Ob05

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	M. Shamsuzzoha Basunia, Anagha Chakraborty	NDS 205,1 (2025)	31-May-2025

2010Ca10: Target=deuterated polythene $(CD)_2$, E=10.6 MeV/nucleon from SPIRAL facility at GANIL. Measured proton spectra, angular distributions, γ-ray spectra in coincidence with protons and protons populating the 4.03 MeV level in coincidence with ^{25}Ne, ^{25}Ne-p-γ coincidence using TIARA, an array of E-ΔE silicon detectors and four EXOGAM segmented Ge detectors. Beam particles analyzed by VAMOS magnetic spectrometer. FWHM=65 keV for γ rays. Comparisons with shell-model calculations.

2007Fe09: E(^{24}Ne)=10 MeV/nucleon (10^4 particle/s), silicon particle detector array, measured particle-γ coincidence with EXOGAM γ-ray detector array; deduced excited levels, spin-parity, L-transfer, spectroscopic factor.

2006Ob05: E(^{26}Ne)=9.7 MeV/nucleon. EXOGAM γ-ray detector array. Measured Eγ, particle-γ coincidence; deduced excited levels, spin-parity.

Other references: 2005Ca44, 2005Ca50.

^{25}Ne Levels

E(level)[†]	J$^\pi$[‡]	L[#]	S
0	1/2$^+$	0[@]	0.80[@]
1700 *2*	5/2$^+$	2[@]	0.15[@]
2062 *25*	3/2$^+$	2[@]	0.44[@]
3321 *5*			
3330 *40*	3/2$^-$	1	0.75
4030? *40*	7/2$^-$	3	0.73

[†] From Eγ.
[‡] From L-transfer, spectroscopic factor, comparison with shell model calculations (2010Ca10), and (d,p) reaction kinematics. Firm assignment in 2010Ca10.
[#] From 2010Ca10, based on dσ/d$\Omega(\theta)$ and comparison with normalized ADWA calculations.
[@] Also in 2007Fe09. L-transfer from experimental angular distribution measurements and calculations (no details given).

$\gamma(^{25}Ne)$

E$_\gamma$[†]	E$_i$(level)	J$_i^\pi$	E$_f$	J$_f^\pi$	Comments
[x]320 *2*					
1621 *5*	3321		1700	5/2$^+$	
1700 *2*	1700	5/2$^+$	0	1/2$^+$	E$_\gamma$: other: 1680 *40* (2010Ca10). FWHM$_{exp}$=51 keV *7* (2006Ob05).
2062 *25*	2062	3/2$^+$	0	1/2$^+$	E$_\gamma$: weighted average of 2030 *40* (2010Ca10) and 2075 *25* (2006Ob05). FWHM$_{exp}$=38 keV *14* (2006Ob05).
2350[‡] *40*	4030?	7/2$^-$	1700	5/2$^+$	
3330[‡] *40*	3330	3/2$^-$	0	1/2$^+$	
4.03×10^3 *10*	4030?	7/2$^-$	0	1/2$^+$	E$_\gamma$: poor statistics. Placed in 2006Ob05, based on placement in other studies.

[†] From 2006Ob05, except where otherwise noted.
[‡] From 2010Ca10.
[x] γ ray not placed in level scheme.

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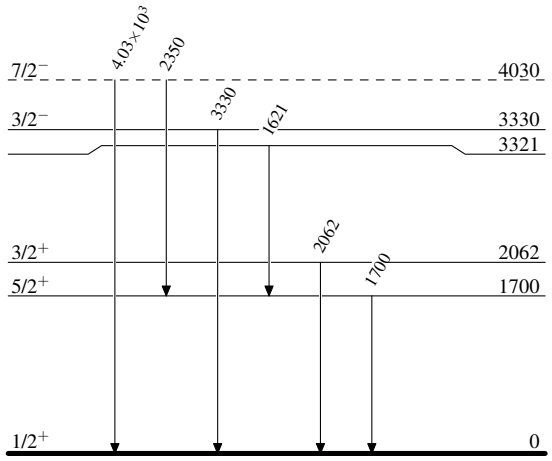
Level Scheme



$^{25}_{10}Ne_{15}$