

$^{29}\text{Ne}$   $\beta^-$  decay 2005Tr05,2006Tr02,1999Re16

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	M. Shamsuzzoha Basunia		NDS 113, 909 (2012)	1-Jan-2012

Parent:  $^{29}\text{Ne}$ :  $E=0$ ;  $J^\pi=(3/2^+)$ ;  $T_{1/2}=15$  ms 3;  $Q(\beta^-)=15.73\times 10^3$  10;  $\% \beta^-$  decay=100.0

Other: 2005Tr13.

2005Tr05,2006Tr02,2005Tr13:  $^{29}\text{Ne}$  was produced from fragmentation of 140 MeV/nucleon  $^{48}\text{Ca}$  beam on Be target, separated by magnetic fields of the A1900 at NSCL; implanted in double-sided Si microstrip detector; Measured  $E_\gamma$ ,  $I_\gamma$ , deduced level scheme.

1999Re16:  $^{29}\text{Ne}$  was produced from fragmentation of 2.8 GeV  $^{36}\text{S}$  beam on Ta target. Mass identification by time-of-flight and energy loss. Measured  $\beta^- \gamma$  coincidence.

$E_\gamma$ ,  $I_\gamma$  and level schemes are from 2005Tr05 and the data are same in 2006Tr02 and 2005Tr13.

 $^{29}\text{Na}$  Levels

E(level)	$J^\pi$	Comments
0.0	$3/2^+$	$J^\pi$ : From Adopted Levels.
72	$(5/2^+)$	$J^\pi$ : From $^{29}\text{Ne}$ $\beta^-$ decay, feeding from $(3/2^+)$ , and shell model prediction (2005Tr05).
1249		
1588		
3059		
3723		
4166		

 $\beta^-$  radiations

E(decay)	E(level)	$I\beta^- \dagger \ddagger$
$(1.156\times 10^4)$ 10	4166	11 1
$(1.201\times 10^4)$ 10	3723	5 1
$(1.267\times 10^4)$ 10	3059	3 1
$(1.414\times 10^4)$ 10	1588	23 2
$(1.448\times 10^4)$ 10	1249	13 1
$(1.566\times 10^4)$ 10	72	33 10

$\dagger$  Measured value for 100 parent decay in 2006Tr02.

$\ddagger$  Absolute intensity per 100 decays.

 $\gamma(^{29}\text{Na})$ 

$E_\gamma \dagger$	$I_\gamma \dagger \#$	$E_i(\text{level})$	$J_i^\pi$	$E_f$	$J_f^\pi$	Comments
72	54 9	72	$(5/2^+)$	0.0	$3/2^+$	
$^x 223.8 \ddagger$ 7	$10.2 \ddagger$ 18					
339 @		1588		1249		
1176.5 10	5 1	1249		72	$(5/2^+)$	$E_\gamma$ : From 1999Re16. Other: 1177 (2005Tr05). $I_\gamma$ : Other: 18 3 (1999Re16).
1249	12 1	1249		0.0	$3/2^+$	
1516	16 2	1588		72	$(5/2^+)$	
1588	11 2	1588		0.0	$3/2^+$	
2578	5 1	4166		1588		
$^x 2822.4 \ddagger$ 27	$13 \ddagger$ 10					
2918.2 15	3.5 5	4166		1249		$E_\gamma$ : From 1999Re16. Other: 2917 (2005Tr05). $I_\gamma$ : Other: 55 13 (1999Re16).
3059		3059		0.0	$3/2^+$	

Continued on next page (footnotes at end of table)

$^{29}\text{Ne} \beta^-$  decay 2005Tr05,2006Tr02,1999Re16 (continued) $\gamma(^{29}\text{Na})$  (continued)

$E_\gamma$ <sup>†</sup>	$I_\gamma$ <sup>†#</sup>	$E_i(\text{level})$	$J_i^\pi$	$E_f$	$J_f^\pi$
3723		3723		0.0	3/2 <sup>+</sup>
4094	1.2 4	4166		72	(5/2 <sup>+</sup> )
4166	2.9 6	4166		0.0	3/2 <sup>+</sup>

<sup>†</sup> From 2005Tr05, except otherwise noted.

<sup>‡</sup> From 1999Re16 not reported in 2005Tr05.

# Absolute intensity per 100 decays.

@ Placement of transition in the level scheme is uncertain.

<sup>x</sup>  $\gamma$  ray not placed in level scheme.

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## Decay Scheme

Intensities:  $I_{(\gamma+ce)}$  per 100 parent decays

## Legend

- $I_\gamma < 2\% \times I_\gamma^{max}$
- $I_\gamma < 10\% \times I_\gamma^{max}$
- $I_\gamma > 10\% \times I_\gamma^{max}$
- - - - -→  $\gamma$  Decay (Uncertain)

